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NEUTRON AND GAMMA RAY PRODUCTION CROSS SECTIONS FOR SODIUM, MAGNESIUM, CHLORINE, POTASSIUM, AND CALCIUM

PART II

SODIUM

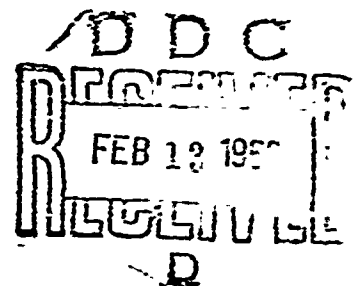J. D. Garrison and M. K. Drake

GENERAL ATOMIC DIVISION OF GENERAL DYNAMICS CORPORATION

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NEUTRON AND GAMMA RAY PRODUCTION CROSS SECTIONS
FOR SODIUM, MAGNESIUM, CHLORINE, POTASSIUM, AND CALCIUM

PART II

SODIUM

J. D. Garrison and M. K. Drake

General Atomic Division of General Dynamics Corporation

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Prepared For

US ARMY
NUCLEAR DEFENSE LABORATORY
Edgewood Arsenal, Maryland

PREFACE

A study has been made of the neutron interaction prob-
abilities for sodium, magnesium, chlorine, potassium, and
calcium. Sets of neutron and gamma ray production cross
sections have been prepared for these elements. This report,
which is divided into six parts, describes the methods used
to prepare the recommended set of data. Part I contains
general information and the data format used. Parts II
through VI describe the neutron cross sections for each of
the five elements. The titles for Parts I through VI,
respectively, are: General Information and Data Format,
Sodium, Magnesium, Chlorine, Potassium, and Calcium.

ABSTRACT

Sets of neutron and gamma ray production cross sections have
been prepared for the element sodium. These data sets include
total and partial neutron cross sections as well as the cross
sections for producing deexcitation gamma rays. Information
is also given for the angular and energy distribution of the
secondary neutron and gamma rays.

3

CONTENTS

1. INTRODUCTION

This report describes the neutron cross sections for sodium. Neutron interactions for the energy range from 0.01 eV to 20.0 MeV have been assessed and recommended sets of neutron cross sections have been prepared. Total and partial neutron cross sections have been obtained along with energy and angular distributions of secondary neutrons. Also, gamma ray production cross sections and energy and angular distributions of secondary gamma rays have been obtained.

The rec_mended cross sections have been based primarily on an evaluation of the available experimental data. Theoretical model calculations have been used to obtain recommended cross sections where experimental data were not available. Also, in some energy regions, best estimates have had to be made where experimental data were lacking and model calculations were not considered to be valid.

A systematic review was made of experimentally measured neutron cross section data. This literature survey is believed to be reasonably complete for data available through August 1966.

2. PHYSICAL PROPERTIES OF SODIUM

Sodium is a mono-isotopic element. The atomic mass for ^{23}Na is 22.98977[1] in the carbon-12 system. With the exception of elastic and inelastic scattering, neutron interactions with ^{23}Na produce residual nuclei that have relatively short half lives. Table 1 gives several of the more important reactions of neutrons with ^{23}Na and the decays of the residual nuclides.

Table 1

Neutron Reactions with Sodium-23

Reaction	Residual Nucleus	Decay Mode (half life)	Decay Nucleus
n,n	^{23}Na	stable	
n,γ	^{24}Na	β⁻(15.0 hr.)	^{24}Mg
n,p	^{23}Ne	β⁻(38 sec.)	^{23}Na
n,α	^{20}F	β⁻(11 sec.)	^{20}Ne
n,d	^{22}Ne	stable	
n,t	^{21}Ne	stable	
n,2n	^{22}Na	β⁺(2.58 yr.)	^{22}Ne
n,np	^{22}Ne	stable	
n,nα	^{19}F	stable	

3. POSSIBLE NEUTRON REACTIONS

3.1 Thresholds for Neutron Induced Reactions

The possible neutron interaction channels that have been considered in this study have been taken from compilations by Howerton, et al.[2] and from Endt and Van der Leun.[3] The possible neutron reactions and their threshold energies are summarized in Table 2.

Table 2

Thresholds for Neutron Reactions with ^{23}Na

	Reaction	Threshold(MeV)	Q-Value(MeV)
	n,2n	12.98	- 12.434
	n,3n	24.49	- 23.461
	n,p	3.76	- 3.597
	n,np	9.18	- 8.794
	n,d	6.85	- 6.562
	n,nd	17.69	- 16.946
	n,t	11.16	- 10.691
	n,nt	18.22	- 17.454
	n,He^3	17.10	- 16.381
	n,α	4.05	- 3.880
	n,nα	10.95	- 10.498
	n,γ	0.0	+ 6.959
(lowest level)	n,n'	0.4585	0.4392

3.2 Discrete Gamma Rays Emitted After Inelastic Scattering

Numerous gamma rays may be emitted from decay of levels that have been excited by inelastic neutron scattering. The energy levels of ^{23}Na have been taken from data compiled by Endt and Van der Leun.[3] The gamma ray transitions and branching ratios have been taken from this compilation[3] and from recent measurements.[4-8] The energy level scheme that has been used in this study is shown in Figure 1.

The spins and parities of the ground and first excited states have been found to be 3/2$^+$ and 5/2$^+$, respectively. The spin and parity assignments for these levels appear to be quite well founded. However, for the higher energy levels, there remains some question about the spins and parities. The values given in Figure 1 were taken from measurements by Lancman, et al.[7] Lancman also reviewed the status of the spin and parity assignments for the levels in ^{23}Na .

8

Figure 1

Energy Levels of ^{23}Na
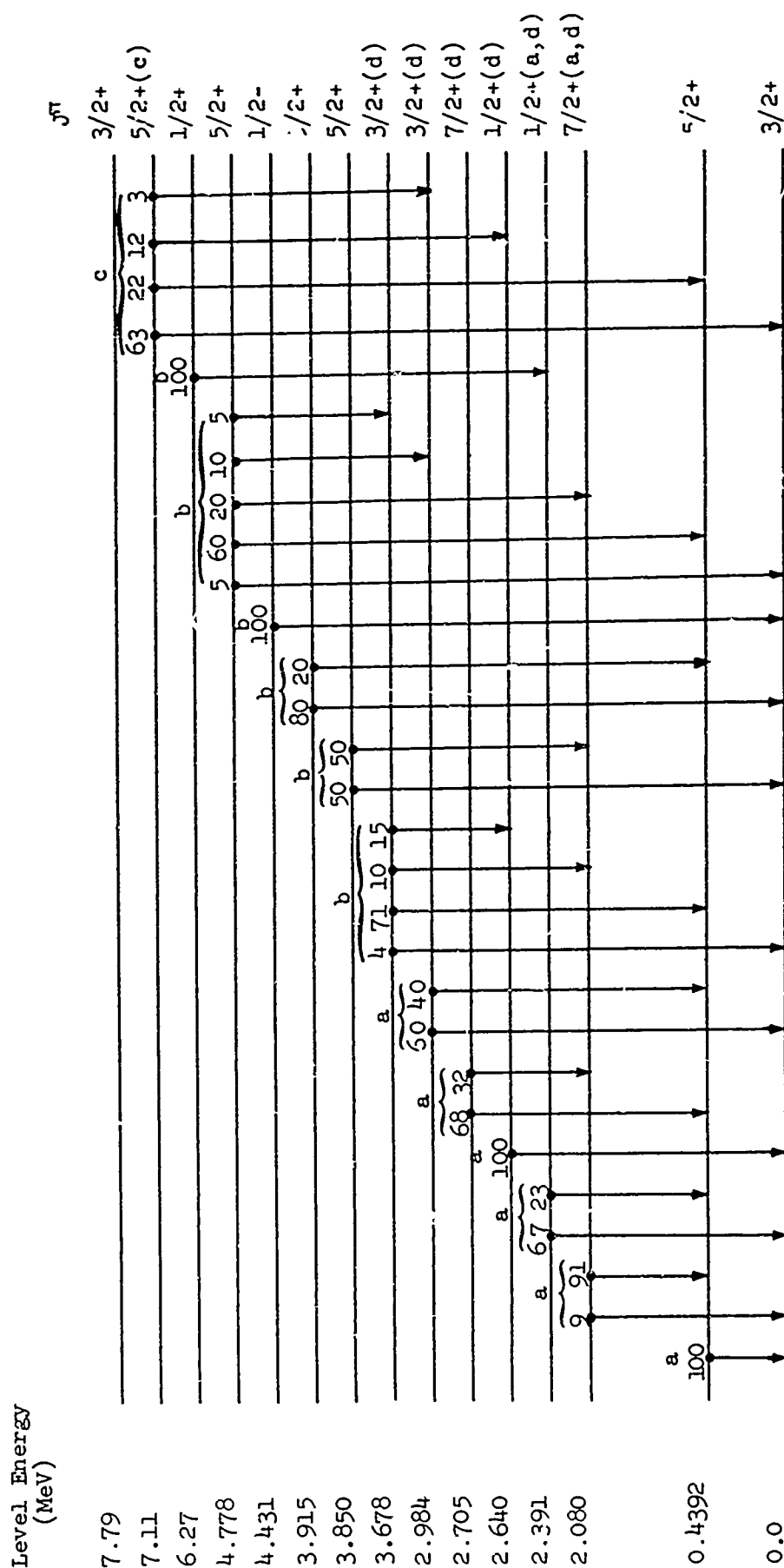
Three possible energy levels have been ignored because of the uncertainties involved. Lancman, et al.[7] has observed two uncertain levels, one at 2.403 MeV and the other at 2.87 MeV. A level at 5.5 MeV, identified by Boyer[9] using a (d,d') reaction, has not been observed by experiments[5] that should have detected this level.

The discrete gamma rays, from inelastic neutron scattering, that have been considered in this study are given in Table 3. The mixing ratio for the 0.4392 MeV $(5/2^+)$ to 0.0 $(3/2^+)$ transition has been taken from Endt and Van der Leun.[3]

3.3 Discrete Gamma Rays Emitted After Proton Emission

Neutrons that have incident energies of 4.8 MeV or more may undergo (n,p) interactions that leave the residual nucleus, ^{23}Ne, in an excited state. ^{23}Ne has excitation levels[3,10,11] at 1.02, 1 70, and 1.83 MeV. However, very little information was available to establish the nature of the deexcitation for levels higher in energy than the 1.02 MeV levels. Figure 2 shows the energy levels and decay properties of ^{23}Ne .

3.4 Discrete Gamma Rays Emitted After Alpha Emission

In a manner similar to the (n,p) reaction in ^{23}Na, gamma rays may be emitted in the (n,α) reaction for neutrons that have energies higher than 4.7 MeV. Decay of the first two levels in ^{20}F has been observed.[10] The energy levels in ^{20}F are shown in Figure 3.

4. NEUTRON CROSS SECTIONS

4.1 The Total Cross Section

The references which served as sources of total cross section data are presented in Table 4, along with the range of energies covered by the measurements. Figures A-1 through A-10 of the Appendix present the plotted results of these measurements from 0.01 to 20 MeV along with the line through the data which serves as the "best" estimate of the total cross section of sodium. The details of the data evaluation follow.

The line through the data follows the measurements of Joki, Miller, and Evans[12] up to 10 eV. Below approximately 0.4 eV it was convenient to treat the scattering cross section as constant and add the capture

Table 3

Gamma Rays Produced by Inelastic Scattering in Sodium

Gamma Energy (MeV)	Transition				Multipolarity
0.4392	0.4392	(5/2+) to 0.0	(3/2+)		M1, E2*
2.08	2.08	(7/2+) to 0.0	(3/2+)		E2
1.64	2.08	(7/2+) to 0.4392	(5/2+)		M1, E2
2.391	2.391	(1/2+) to 0.0	(3/2+)		(Isotropic)**
1.952	2.391	(1/2+) to 0.4392	(5/2+)		(Isotropic)
2.64	2.64	(1/2+) to 0.0	(3/2+)		(Isotropic)
2.266	2.705	(9/2+) to 0.4392	(5/2+)		E2
0.625	2.705	(9/2+) to 2.08	(7/2+)		M1, E2
2.984	2.984	(3/2+) to 0.0	(3/2+)		M1, E2
2.545	2.984	(3/2+) to 0.4392	(5/2+)		M1, E2
3.678	3.678	(3/2+) to 0.0	(3/2+)		M1, E2
3.239	3.678	(3/2+) to 0.4392	(5/2+)		M1, E2
1.598	3.678	(3/2+) to 2.08	(7/2+)		E2
1.038	3.678	(3/2+) to 2.64	(1/2+)		M1, E2
3.850	3.850	(5/2+) to 0.0	(3/2+)		M1, E2
1.77	3.850	(5/2+) to 2.08	(7/2+)		M1, E2
3.915	3.915	(5/2+) to 0.0	(3/2+)		M1, E2
3.476	3.915	(5/2+) to 0.4392	(5/2+)		M1, E2
4.431	4.431	(1/2-) to 0.0	(3/2+)		(Isotropic)
4.778	4.778	(5/2+) to 0.0	(3/2+)		M1, E2
4.339	4.778	(5/2+) to 0.4392	(5/2+)		M1, E2
2.698	4.778	(5/2+) to 2.08	(7/2+)		M1, E2
1.794	4.778	(5/2+) to 2.984	(3/2+)		M1, E2
1.100	4.778	(5/2+) to 3.678	(3/2+)		M1, E2
3.88	6.27	(1/2+) to 2.391	(1/2+)		(Isotropic)
7.11	7.11	(5/2+) to 0.0	(3/2+)		M1, E2
6.66	7.11	(5/2+) to 0.4392	(5/2+)		M1, E2
4.46	7.11	(5/2+) to 2.64	(1/2+)		E2
4.12	7.11	(5/2+) to 2.984	(3/2+)		M1, E2

* Mixing ratio, δ, was found to be 0.045.

** By nature of the decay, these gamma rays have an angular distribution that is isotropic.

11

Figure 2

Energy Levels of ^{23}Ne
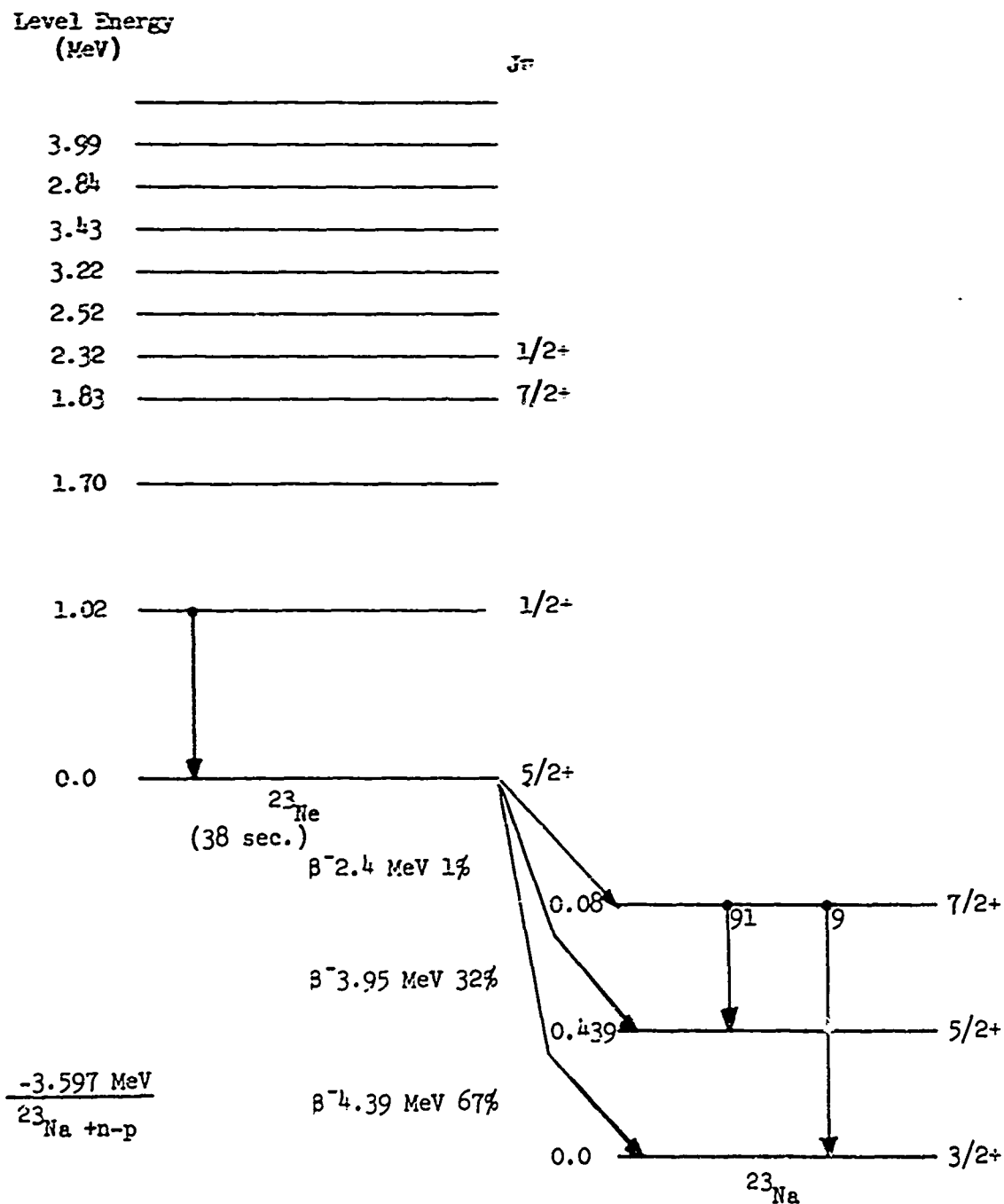
Figure 3

Energy Levels of ^{20}F

Level Energy
(MeV)   J$^{\pi}$

2.9? ——————————————————————

2.87 ——————————————————————

2.20 ——————————————————————

2.0? ——————————————————————

1.9? ——————————————————————

1.85 ——————————————————————

1.31 ——————————————————————

1.06 ——————————————————————

0.99 ——————————————————————

0.83 ——————————————————————

0.65 ——————————————————————

0.0   ——————————————————————   2^{+}

              ^{20}F
              (11 sec.)   5^{-}

                                      1.63 —————————————— 2^{+}

-3.88 MeV
^{23}Ne+n-α

                              -7.05 MeV —————————————— 0^{+}

                                        ^{20}Ne
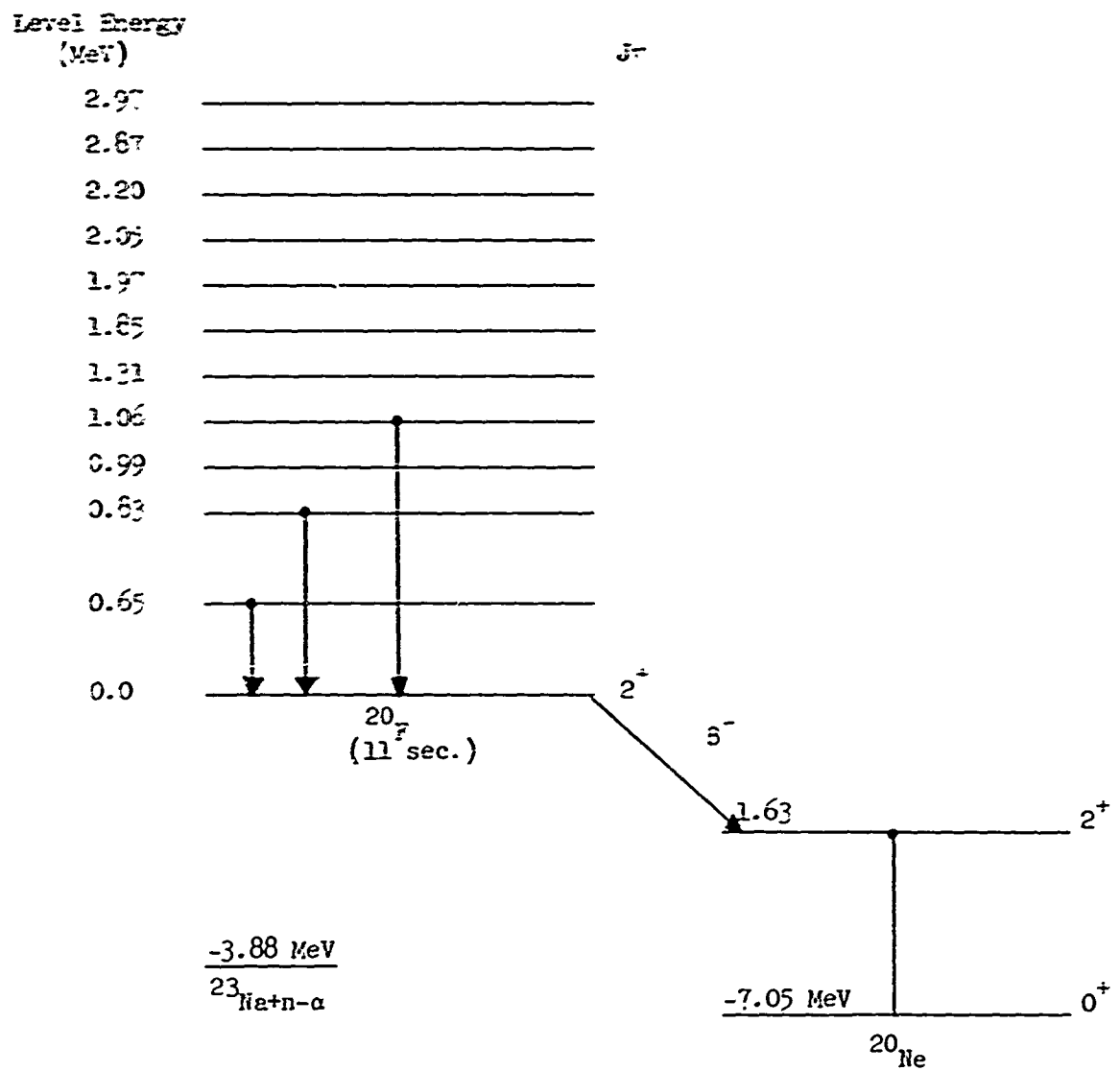
Table 4

Total Cross Section References

Reference	Laboratory	Year	Energy Range of Measurement
Joki, Miller, and Evans[12]	NBS	1955	0.02 - 10 eV
Hodgson, Gallager, and Bowey[13]	Harwell	1952	1.3 eV - 10 keV
J. B. Garg, et al.[16]	Columbia	1965	
Lynn, Firk, and Moxon[17]	Harwell	1957	600 eV - 15 keV
Good, Neiler, and Gibbons[18]	Oak Ridge	1957	2 - 30 keV
Merzbacher, Crutchfield, and Newson[19]	Duke	1959	1 - 100 keV
Hibdon[20]	Argonne	1960	10 - 100 keV
R. K. Adair, et al[21]	Wisconsin	1948	30 - 1000 keV
Hibdon[22]	Argonne	1952	10 - 80 keV
Stelson and Preston[23]	MIT	1952	120 - 1000 keV
Towle and Gilboy[24]	Aldermaston	1961	0.8 - 4 MeV
Vaughn, Imhof, and Johnson[25]	Lockheed	1963	0.9 - 2.1 MeV
Deconninck, et al.[26]	Louvain	1963	0.9 - 2.1 MeV
R. Meier, et al.[27]	Swiss (Zurich)	1953	1.9 - 3.8 MeV
Leroy, Berthelot, and Pomelos[28]	Saclay	1963	2 - 10 MeV
Dvorak and Little[29]	University of Texas	1953	2.1 - 2.8 MeV
C. Colvi, et al.[30]	Italy (Catania)	1963	2.8 - 5.2 MeV
Glasgow and Foster[31]	Hanford	1963	2.8 - 14.5 MeV
Stüwer, Genz, and Bormann[32]	Germany (Hamburg)	1964	4.2 - 6.2 MeV
Fretwurst[33]	Hamburg	1964	4.1 - 5.9 MeV
F. Fabiani, et al.[34]	Italy (Padova)	1965	5.4 - 8.5 MeV
Coon, Graves, and Barschall[35]	Los Alamos	1952	14 MeV
Mazari and Alba[36]		1958	16.2 MeV

cross section to it to obtain the total cross section. There is no
evidence of crystalline effects in the total cross section at low ener-
gies. The measurements of Hodgson, Gallager and Bowey[13] are in agree-
ment with the above measurements down to their lower limit at 2.3 eV.
From 10 eV to 500 eV their measurements are the only measurements avail-
able and have been used to obtain the total cross section in this region.

Over the 2.85 keV resonance the resonance parameters given in BNL-
325, Supplement 1[14] have been used to calculate the total and capture
cross section Doppler broadened to 300°K. The calculated cross section
fits well with the experiment in the peak of the resonance but does
not fit well in the wings of the resonance, primarily because the
spin dependence of the scattering radius[15] was not included in the code
used for these calculations. Where the calculated curve deviates from
the experimental measurements, a smooth curve through the measurements
of Lynn, Firk and Moxon[17] and Good, Neiler and Gibbons[18] has been
drawn, below the resonance down to 500 eV and above the resonance up to
10 keV, rather than following the calculated curve. Recently a J value
of two rather than one has been reported[16] for this resonance. Be-
cause this recent result is in disagreement with the better previous
results and is rather preliminary, it has not been used.

Between 10 keV and 50 keV a smooth curve has been drawn through the
experimental data. Greatest weight has been given to the measurements
of Hibdon[20] which are close to the mean of the other measurements and
which have greater statistical precision. It should be noted that the
weak resonance at about 30 kev recently observed in the capture cross
section by C. Le Rigoleur, et al[37] is not noticeable in the total cross
section.

Above 50 keV the curve through the experimental points has been
joined smoothly with cross section points calculated using the reso-
nance parameters of the 54 keV resonance[14] Doppler broadened to 300°K.
Above the resonances the calculated curve has been joined smoothly to a
curve drawn through the experimental points. Here again the measurements
of Hibdon[20] have been given the greatest weight for energies up to 100
keV.

From 100 keV to approximately 1.0 MeV the measurements of Stelson and Preston[23] have been used entirely because they have the best resolution and statistical precision. The level of the measurements of Adair, et al.[21] is in agreement with those of Stelson and Preston, but these measurements are sparse and of lower statistical accuracy and resolution.

From 1.0 to 2.0 MeV the measurements of F. W. Vaughn, et al.[25] have been used primarily to determine the shape of the total cross section since these points show less scatter and indicate somewhat better resolution than the other points. However, the level of the cross section has been determined by all of the measurements in this energy region, so that the smooth curve lies somewhat below the measurements of Vaughn, et al.[25] above 1.2 MeV. At the upper end of this energy region the measurements of Deconninck, et al.[26] and K. Meier, et al.[27] have been given more weight in the determination of the shape of the cross section.

Above 2.0 MeV the different measurements are all in rather good agreement, an agreement which generally improves as the energy increases. This is presumably because the fluctuations in the cross section are decreasing as the energy increases. A smooth curve has been drawn through the points up to 14.5 MeV.

The remaining total cross section from 14.5 to 20 MeV has been determined from the experimental point at 16.2 MeV and an optical model calculation using the code ABACUS-II.[38] The potential well parameters used for the calculations were those of P. F. Zweifel, et al. as presented by T. J. Krieger and S. Pearlstein[39] but changed to match the known variation of the well parameters with energy.[40]

4.2 The Capture Cross Section

The references which served as sources of capture cross section data are presented in Table 5 along with the energy or energy range of the measurements. Figures A-11 and A-12 of the Appendix present the plotted results of the measurements along with the line through the data which serves as the "best" estimate of the capture cross section. The capture cross section measurements at 0.0253 eV are presented with the references rather than plotted.

The value of the thermal capture cross section recommended by J. R. Stehn, et al. in BNL-325, Supplement 2[41] can be taken as the best value.

16

Table 5

Capture Cross Section References

Reference	Year	Laboratory	Energy Range of Measurement
E. T. Josefowicz [42]	1963	Warsaw	0.0253 eV (532 ± 5 mb)
G. Wolf [43]	1961	Munich	0.0253 eV (531 ± 8 mb)
Meadows and Whalen [44]	1961	Argonne	0.0253 eV (470 ±60 mb)
Rose, Cooper and Tattersall [45]	1959	Harwell	0.0253 eV (539 ± 8 mb)
Cocking and Raffle [46]	1956	Harwell	0.0253 eV (537 ± 6 mb)
W. A. Brooksbank, et al. [47]	1955	Oak Ridge	0.0253 eV (500 ±50 mb)
B. Grimeland [48]	1955	Kjeller, Norway	0.0253 eV (514 ±30 mb)
R. M. Bartholomew, et al. [49]	1953	Chalk River	0.0253 eV (563 ±32 mb)
Harris, Rose and Schroeder [50]	1953	Argonne	0.0253 eV (506 ± 5 mb)
Littler and Lockett [51]	1952	Harwell	0.0253 eV (540 ±14 mb)
H. Pomerance [52]	1951	Oak Ridge	0.0253 eV (489 ±25 mb)
S. P. Harris, et al. [53]	1950	Argonne	0.0253 eV (556 mb)
Colmer and Littler [54]	1950	Harwell	0.0253 eV (543 15 mb)
Seren, Friedlander and Turkel [55]	1947	Argonne	0.0253 eV (630 130mb)
Booth, Ball and MacGregor [56]	1958	Livermore	20 keV
Konovov, Stavisskii and Tolstikov [57]	1958	USSR	25 keV
Macklin, Gibbons and Inada [58]	1963	Oak Ridge	30, 65 keV
Macklin, Lazar and Lyon [59]	1957	Oak Ridge	25 keV
A. I. Leipunsky, et al [60]	1958	USSR	25 keV
C. Le Rigoleur, et al.[37]	1965	Cadarache and Saclay	10 - 135 keV
Bame and Cubitt [61]	1958	Los Alamos	20 kev - 1 MeV
Lyon and Macklin [62]	1959	Oak Ridge	195 keV
Hughes, Garth and Levin [63]	1953	Brookhaven	~ 1 MeV
Perkin, O'Connor and Coleman [64]	1958	Aldermaston	14.5 MeV

17

From 0.01 eV to about 4.5 keV the capture cross section curve shown in Figure A-11 was calculated from the parameters of the 2.85 keV resonance found in BNL-325 Second Edition, Supplement 1.[14] The radiation width of this resonance is chosen to yield the thermal capture cross section. The strength and proximity of this resonance and attempts to fit the total cross section in this region[15] make it unlikely that any negative energy resonance contributes significantly to the thermal cross section. The other positive energy resonances are either too far away, too weak, or are not s-wave resonances, and make a negligible contribution to the thermal capture cross section.

Above 4.5 keV a smooth transition is made to a curve which follows the measurements of C. Le Rigoleur, et al.[37] up to 150 keV. In the transition region the curve lies below the first two measured points of C. Le Rigoleur, et al. This is desirable since the energy spread of the neutrons involved in their measurements would make these points high because of the proximity of the 2.85 keV resonance. Here a transition is made from the "perfect" resolution of the calculated capture cross section to the poorer resolution of the capture cross section measurements. The measurements of C. Le Rigoleur have been selected because they have better resolution than most of the other measurements and have provided a better energy variation of the capture cross section. The average level of their measurements is in fairly good agreement with the data of the other experimenters.

From 150 keV to 1.0 MeV the experimental points of S. J. Bame and R. L. Cubitt[61] have been followed. Above 1.0 MeV the cross section is extremely small and is essentially unknown since the measurement by J. L. Perkin, et al.[64] is undoubtedly much too high. The cross section is not expected to rise to the extent indicated by their measurements in going from 1.0 MeV to 14.5 MeV. This is borne out by the fact that their measurements are high for Mg and ^{27}Al.

Capture cross sections for a given value of the orbital angular momentum are expected statistically to drop off with increasing energy like $1/E$ when the neutron width exceeds the radiation width and when there is no competition from other reactions. Increasing competition from other reactions, which is expected as the energy is increased, will cause a more

18

rapid drop in this partial capture cross section. The total capture cross section is not expected to drop as rapidly since higher and higher angular momenta contribute as the energy increases. Because the capture cross section above 1.0 MeV is small, it has been arbitrarily assumed to drop off as $1/E$ above 1.0 MeV up to 20 MeV, rather than trying to estimate it in a more refined manner.

4.3 Charged Particle Cross Sections

4.3.1 The (n,p) Cross Section

Figures A-13 and A-14 of the Appendix present the (n,p) cross section measurements of sodium from threshold at 3.76 MeV to 20 MeV along with the smooth curve drawn through the data. The (n,p) cross section references are presented in Table 6.

From 3.76 MeV to 10.5 MeV the measurements of Williamson[65] were followed. Considerable structure is shown in the cross section in this energy region. The limited measurements of Jelley and Paul[67] are in agreement with those of Williamson. The measurement of R. Bass, et al.[68] at 8.0 MeV lies somewhat higher than those of Williamson.

Between 10.5 and 14.0 MeV the (n,p) cross section has been guessed. The shape of the cross section is that characteristic of the (n,p) cross section of other nuclides. Since the slope and value of the cross section are reasonably well determined by experiment at each end of this energy region, the guess is expected to be fairly accurate.

From 14.0 MeV to 20.0 MeV a smooth curve has been drawn through the data. All the data for this energy region are in good agreement except for the low measurement of M. Bormann, et al.[69] at 14.0 MeV which has been discounted.

All of the measurements of the (n,p) cross section of sodium except for those of D. L. Allan[70] are activation measurements. Because of this, the cross section shown will also include (n,pγ), (n,p2γ), etc. reactions. The Allan measurements could also include these reactions. They were corrected for the (n,np) reaction.

19

Table 6

Reference for the (n,p) Cross Section

Reference	Laboratory	Year	Energy Range
C. F. Williamson[65]	Texas	1961	4 - 10.5 MeV
Picard and Williamson[66]	Saclay	1963	14 - 21 MeV
Khurana and Govil[71]	India	1964	14.8 MeV
Csikai, Gyarmati and Hunyadi[72]	Hungary	1962	14.6 MeV
Mukherjee, Ganguly and Majumder[73]	Saha Inst.	1961	14.8 MeV
D. L. Allan[70]	Harwell	1961	14.0 MeV
M. Bormann[69]	Hamburg	1960	14.0 MeV
Paul and Clarke[74]	Chalk River	1953	14.4 MeV
Mitra and Ghose[75]	India	1966	14.8 MeV
Bass, Saleh and Fanger[68]	Frankfurt	1965	8 MeV

4.3.2 The (n,α) Cross Section

The (n,α) cross section measurements of sodium are presented
in Figure A-15 of the Appendix along with the smooth curve through
the data from threshold at 4.05 MeV to 20 MeV. The references for
the measurements are listed in Table 7.

From 4.05 up to 10.5 MeV the data of Williamson[65] has been
followed although no attempt has been made to give the structure to
the cross section indicated by the scatter of points between 8.5 and
10.5 MeV.

From 14 to 20 MeV a smooth curve has been drawn through the
data which are all in reasonable agreement except for the measurements
of M. Bormann, et al,[69] which are believed to be low.

Between 10.5 and 14 MeV the cross section has been guessed by
completing the smooth curve between the regions where measurements
have been made as was done in the (n,p) case. Again, the curve in
this region is expected to be a fairly accurate representation of
the cross section.

All of the (n,α) measurements, except those of Bizzeti, et al[76],
were activation measurements so that actually the cross section

20

indicated is the sum of (n,α), $(n,\alpha\gamma)$, $(n,\alpha\,2\gamma)$, etc. cross sections.
The Bizzeti, et al.[76] measurements also include the $(n,n\alpha)$ reaction,
but this is claimed and appears to be small.

Table 7

References for the (n,α) Cross Section

Reference	Laboratory	Year	Energy Range
Picard and Williamson[66]	Saclay	1963	14 - 21 MeV
Williamson[65]	Texas	1961	6 - 10.5 MeV
Bizzeti, Bizzeti-Sona, Bocciolini[76]	Florence	1962	14.0 MeV
Mukherjee, Ganguly and Majumder[73]	Saha Inst.	1961	14.8 MeV
M. Bormann, et al.[69]	Hamburg	1960	14 MeV
Csikai, Gyarmati and Hunyadi[72]	Hungary	1962	14.6 MeV
Bass, Saleh and Fanger[68]	Frankfurt	1965	8 MeV

4.3.3 Other Cross Sections for Charged Particle Emission

Figure A-16 of the Appendix shows the measurements of the
$(n,n\alpha)$ cross sections of a number of light nuclei as a function of
the energy above threshold as taken from BNL-325, Second Edition,
Supplement 2.[41] Included in the figure is a single inaccurate
determination of this cross section for sodium by subtraction of
the (n,α) cross section from the measurement of O. N. Kaul[77] and
a guess for the $(n,n\alpha)$ cross section of sodium up to 12 MeV above
threshold. Since there seems to be no simple dependence of the
cross section on mass number, the guessed cross section is given
the approximate shape of the measurements for other light nuclides
as a function of energy and a level which forces the curve through
the one measurement for sodium. The threshold for the $(n,n\alpha)$
reaction of 10.95 MeV is added to the energy scale in the figure
to obtain the incoming neutron energy.

Figure A-17 of the Appendix shows the measurements of the
(n,np) cross section of a number of light nuclei plotted against the
energy above threshold. These data were taken from BNL-325, Supple-
ment 2.[41] There appears to be no simple dependence of the (n,np)
cross section as a function of mass number. The smooth curve drawn
through the data has been used as the sodium (n,np) cross section.

21

The threshold energy of 9.18 MeV added to the energy scale of the figure yields the incoming neutron energy of the cross section. · No measurements of the (n,np) cross section have been made for sodium.

The cross sections for the following reactions have not been included in this cross section compilation: (n,d), (n,nd), (n,t), (n,nt), and (n,He^3). The reactions (n,nd), (n,nt) and (n,He^3) all have thresholds near or above 17 MeV and are expected to make very small contributions up to 20 MeV. No measurements of the (n,d) and (n,t) cross sections exist. Their thresholds at 6.85 and 11.16 MeV, respectively, make it likely that their contribution to the cross section is desirable. There is some indication from the experiments of Hassler and Peck[78] that the (n,d) cross section is not unimportant at 14 MeV. However, the measurements shown are at 0° and the cross section is expected to be peaked in the forward direction so that it is impossible to determine the (n,d) cross section from their measurements. Sodium was not one of the nuclei measured by Hassler and Peck. No information on the (n,t) cross section is available. No attempt has been made to calculate these cross sections. Neglect of these cross sections had the effect of increasing the inelastic cross section.

4.4 The (n,2n) Cross Section

Figure A-10 of the Appendix shows the measurements of the (n,2n) cross section of sodium from threshold at 12.98 MeV to 20 MeV. Also included in the figure is a smooth (n,2n) cross section curve calculated by the method of Pearlstein.[79] The references from which the data in the figure were obtained are listed in Table 8.

It is seen from the figure that the data above 14 MeV are in violent disagreement, the data of Picard and Williamson[66] lying considerably lower than those of Liskien and Paulsen[80]. Although the latter data have greater precision, another independent measurement at 14.1 MeV by Prestwood[81] is in better agreement with the measurements of Picard and Williamson. The discrepancy apparently cannot be resolved without further measurement. The choice here has been to use the calculated cross section which lies intermediate between the two sets of experimental data.

22

4.5 The Inelastic Scattering Cross Section

Figures A-19 through A-22 of the Appendix present the measurements of the inelastic scattering cross section of sodium for the 0.438, 2.08, 2.39 MeV levels and the total inelastic scattering cross section. References for these data are presented in Table 9. The dashed curves in the figures represent the results of the Hauser-Feshbach calculation contained in ABACUS II which used the same potential well parameters as discussed under the total cross section. The solid curves in the figures represent the best estimate of the cross section. For the 0.438 MeV level the results of Chien and Smith[88], Towle and Gilboy[82] and to some extent those of Lind and Day[83] are most heavily weighted above 1.0 MeV since they are of higher resolution than the earlier measurements, giving more of the cross section structure.

At 2.2 MeV, the threshold for exciting the 2.08 MeV level, the solid curve of Figure A-19 for the 0.438 MeV level is joined smoothly to the Hauser-Freshbach calculation of the total inelastic scattering cross section up to 9.0 MeV. As seen in Figure A-22 this calculation lies above the measurements of Shipley, et al.[85], Strizhak[89], Lovchikova and Sal'nikov[90], and Pasechnik.[91] However, there is no reason to expect the total inelastic cross section to drop, as indicated by these experiments since this is below the threshold for competition from other reactions. The fact that the Hauser-Feshbach calculation is in good agreement with the measurements up to 2.0 MeV supports this stand. The measurements of Lovchikova and Sal'nikov, and Pasechnik can readily be low because of the difficulty in separating the elastically scattered neutrons from those inelastically scattered by excitation of the 0.438 MeV level with the threshold detectors used in their experiments. The results of Shipley, et al. were obtained by an experiment primarily aimed at obtaining the angular distribution of the inelastically scattered neutrons. The precision of the experiment and the difficulties associated with the determination of the counter efficiencies make it appear reasonable to discount their results.

At energies above 9.0 MeV the inelastic cross section has been obtained by subtracting the charged particle, the (n,2n) and capture cross sections from the nonelastic cross section. Very little experimental data were available for the nonelastic cross section of sodium.

23

Table 8

References for the (n,2n) Cross Section

Reference	Laboratory	Year	Energy Range
Picard and Williamson[66]	Saclay	1962	12.5-21 MeV
R. J. Prestwood[81]	Los Alamos	1955	14.0 MeV
Liskien and Paulsen[80]	Geel, Belgium	1964	12.5-16.5 MeV

Table 9

References for the Inelastic Cross Section

Reference	Laboratory	Year	Energy Range
Towle and Gilboy[82]	Aldermaston	1962	0.5-2 MeV
Lind and Day[83]	Los Alamos	1961	0.4-2.2 MeV
Freeman and Montague[84]	Harwell	1958	0.5-1.3 MeV
Shipley, Owen and Madansky[85]	John Hopkins	1959	3.5-4 MeV
Glazkov[86]	USSR	1962	0.6,0.8,1.2 MeV
Poze and Glazkov[87]	USSR	1956	1.0 MeV
Chien and Smith[88]	Argonne	1965	0.8-1.5 MeV
Strizhak[89]	USSR	1956	2.5 MeV
Lovchikova and Sal'nikov[90]	USSR	1961	2.5 MeV
Pasechnik[91]	USSR	1955	2.5, 4.1 MeV

The nonelastic cross section was obtained by drawing a smooth curve through the experimental data given in BNL-325, Second Edition, Supplement 2[41] for the element aluminum. Because the (n,p) cross section has some structure between 9 and 11 MeV and the other cross sections do not show this structure, the inelastic cross section in this region has an inverted structure obtained in the subtraction which is not real.

5. ANGULAR DISTRIBUTION OF SECONDARY NEUTRONS

5.1 Elastically Scattered Neutrons

The angular distribution of elastically scattered neutrons has been observed[92,93,94] to change rapidly as a function of incident neutron energy, particularly for the neutron energy range from 0.2 to 1.2 MeV.

In this energy range the angular distributions have been found to be very dependent upon the scattering resonance properties. Because of this, the reported elastic scattering measurements were difficult to interpret. Measurements made at slightly differing incident energies and with the same resolution, or even at the same energy but with different resolutions, were found to differ by large amounts.

Block, et al.[95] reported a measurement from which they deduced that elastically scattered neutrons from the 2.8 keV resonance were isotropic. Langsdorf, et al.[96] and Block, et al.[97] have made measurement at a few angles for scattered energy points between 0.05 to 0.2 MeV. Although these measurements were made with rather low experimental resolution, they did give some idea of the average angular distribution for elastically scattered neutrons for this energy range.

Several measurements[92,93,94] have been reported for the energy range from 0.2 to 2.2 MeV. Of these, the distributions measured by Chien and Smith[94] for the energy range from 0.3 to 1.5 appear to be the best since they reported the elastic and inelastic neutrons. Towle and Gilboy[82,98] have reported values for measurements made for 0.98, 1.50, 2.515, and 3.97 MeV incident energy neutrons. No experiment measurements were available for neutron energies above 4.0 MeV.

The recommended angular distributions have been based upon experimentally measured data for neutron energies up to 4.0 MeV. Above 4.0 MeV, the recommended distributions have been obtained from model calculations using the ABACUS-II code. (See Figures A-23 through A-25.)

The angular distribution of secondary neutrons has been assumed to be isotropic for incident neutrons of 0.04 MeV and less.

Between 0.04 and 0.2 MeV, the recommended data were taken from the rather rough experimental data[96,97] for this energy range. Between 0.2 and 1.5 MeV, an attempt was made to construct a meaningful set of distributions that were consistent with the available experimental data[92-94] and also give realistic changes in angular distributions across the scattering resonances. Above 1.5 MeV, the few points measured by Towle and Gilboy were used.

5.2 Neutrons from Nonelastic Reactions

The angular distributions from (n,n'. continuum), (n,2n), n,np),
and (n,nα) reactions have been assumed to be isotropic in the center of
mass system. The angular distributions for neutrons scattered to discrete
levels have been obtained using the ABACUS-II code.

Chein and Smith[94] have measured angular distributions of neutrons
that leave the residual nucleus at the 0.439 (5/2+) level. These mea-
surements were made at neutron energies of 1.0, 1.2, and 1.4 MeV. The
distribution for 1.0 MeV incident energy neutrons was essentially iso-
tropic, in agreement with the ABACUS-II calculation. The measurements at
1.2 and 1.4 MeV were slightly forward peaked in angle. Towle and Gilboy[82]
measure distributions for the same level at neutron energies of 0.98,
1.50 and 2.15 MeV. At 0.98 MeV, the measured distribution was in con-
siderable disagreement with the measurement made by Chein and Smith at
this energy. The forward peaking observed by Chein and Smith at 1.4 MeV
was also observed by Towle and Gilboy at 1.5 MeV. At 2.15 MeV the dis-
tribution was observed to be peaked in the backward angles. Towle and
Gilboy also measured the combined angular distributions for the two
levels (2.08 and 2.39 MeV) at a neutron energy of 3.97 MeV. Also mea-
sured at this energy were distributions for the two levels (2.64 and
2.70 MeV) and the level at 2.98 MeV. All of these distributions were
found to be fairly isotropic and in agreement with model calculations.

Shipley, et al.[85] have measured the distribution for scattering to
the 0.439 MeV level for incident neutron energies of 3.49, 3.75, and 4.0
MeV. All of these distributions were observed to be peaked in the back-
ward angles. At 4.0 MeV, this distribution was essentially isotropic.

6. ENERGY DISTRIBUTION OF SECONDARY NEUTRONS

The energy distribution of secondary neutrons has been calculated using
the statistical model described in Volume I of this report. The effective
nuclear temperature has been obtained using

$$T(E) = B \sqrt{E/A}$$

26

where A is the atomic mass. B was taken to be 2.5 f r the (n,n' continuum). For (n,2n), (n,nα), and (n,np) reactions, B was taken to be 1.256 based on neutron spectra measurements made by Sukhanov and Rukavishnikov.[99]

7. GAMMA RAY PRODUCTION CROSS SECTIONS

7.1 Cr ss Sections for Production of Radiative Capture Gamma Rays

Radiative capture of thermal energy neutrons leave the compound nucleus at an excitation energy of 6.959 MeV before gamma decay. A decay scheme for these gamma rays has been established. This decay scheme is shown in Figure 4. The information given in Figure 4 was based on data published in review articles by Endt and Van der Leun[3] and by Groshev, et al.[100]. Also, information from recent measurements by Murray, et al.[101] and by Daum[102] have been incorporated into the recommended data. The transition probabilities are given in Table 10.

7.2 Cross Sections for Production of (n,n'γ) Gamma Rays

Cross sections for production of (n,n'γ) gamma rays have been calculated using the inelastic level cross section described in Section 4.5 and the gamma ray branching ratios given in Figure 1. Cross sections have been obtained for 29 discrete gammas. These have been listed in Table 3.

Many of the higher energy levels decay to the 0.4392 (5/2+) level. Thus the production cross section for the 0.4392 MeV gamma ray was quite large. This cross section was extrapolated to 20.0 MeV by using the cross section measured by Martin and Stewart[103] at 14.1 MeV.

7.3 Cross Sections for Production of Gamma Rays Following Charged Particle Emission

A number of gamma rays may possibly be emitted by these reactions (see Section 3.3 and 3.4). However, lack of experimental data precluded giving any production cross sections for discrete gammas for

Figure 4

Sodium Radiative Capture Gamma Rays

Level Energy
(MeV)

6.959

5.15

4.75

4.36

4.44

4.20

3.90

3.62

3.41

2.56

2.46

1.84

1.347

0.56

0.473

$J\pi$

$(0^+,1^+,2^+,3^-,4^+,)$

$(0^-,1^-,2^-,3^-)$

$(1^+,2^+)$

1^+

(2^+)

1^+

4^+

^{24}Na

21* 6 1 2 15 5 1 8 19 8 11 8 3

30 15 55

55 15 50

50 40
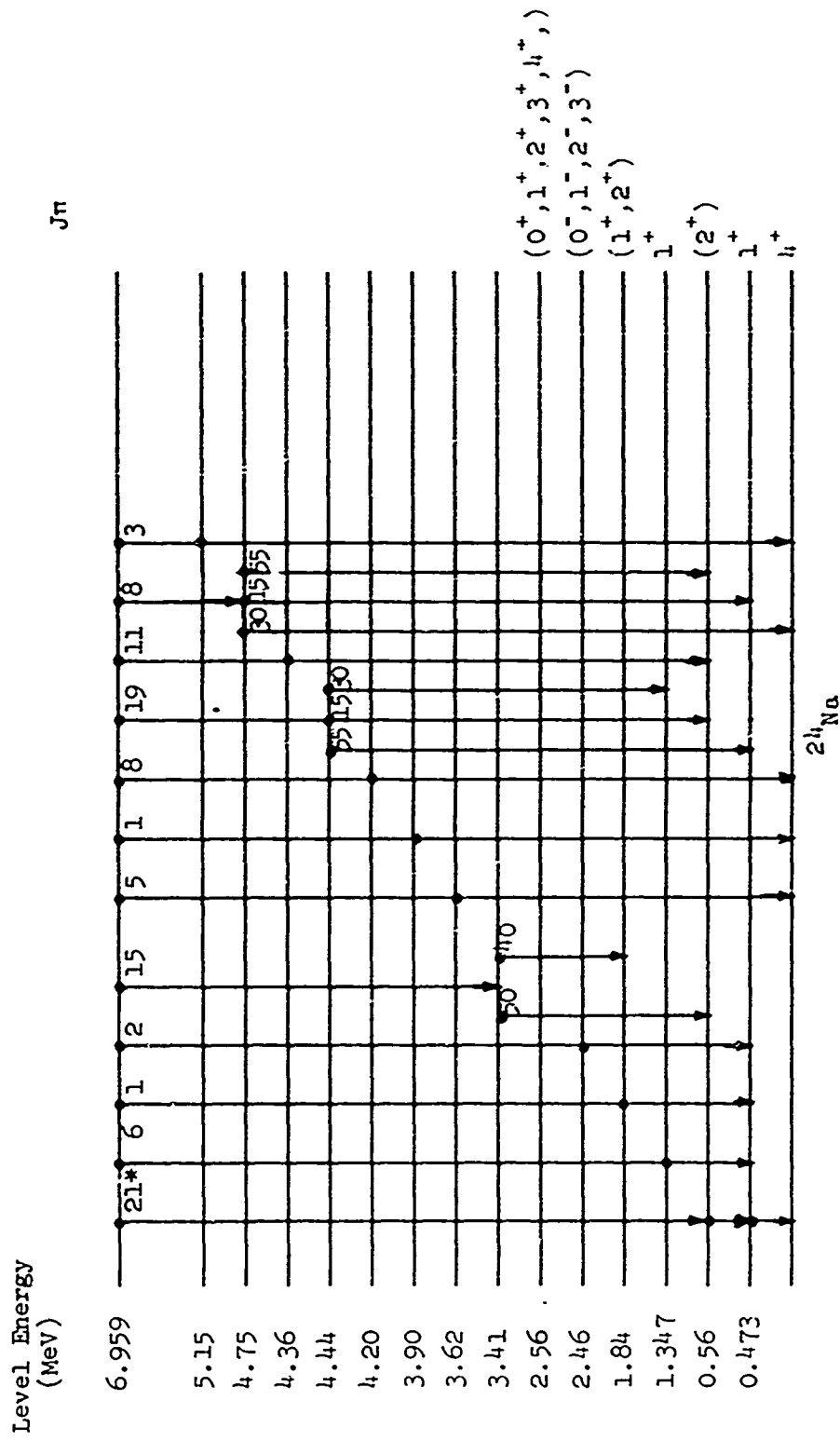
* Percent of the decays from this level.

28

Table 10

Transition Probabilities for (n, γ) Photons

No.	Gamma Ray Energy (MeV)	Transition (Level) to (Level)			Probability (Photons per 100 captures)
1	0.087	0.560	to	0.473	47.8
2	0.473	0.473	to	0.0	80.8
3	0.720	2.56	to	1.84	7.0
4	0.850	3.41	to	2.56	7.0
5	0.874	1.347	to	0.473	12.0
6	1.367	1.84	to	0.473	8.0
7	1.829	6.959	to	5.13	3.0
8	1.987	2.46	to	0.473	2.0
9	2.209	6.959	to	4.75	8.0
10	2.399	6.959	to	4.56	11.0
11	2.519	6.959	to	4.44	19.0
12	2.759	6.959	to	4.20	8.0
13	2.850	3.41	to	0.56	8.0
14	3.850	6.959	to	3.90	1.0
15	3.093	4.44	to	3.093	6.0
16	3.339	6.959	to	3.62	5.0
17	3.549	6.959	to	3.41	15.0
18	3.620	3.62	to	0.0	5.0
19	3.880	4.44	to	0.56	3.0
20	3.900	3.90	to	0.0	1.0
21	3.967	4.44	to	0.473	10.0
22	4.000	4.56	to	0.56	11.0
23	4.180	4.75	to	0.56	4.8
24	4.200	4.20	to	0.0	8.0
25	4.277	4.75	to	0.473	1.0
26	4.499	6.959	to	2.46	2.0
27	4.750	4.75	to	0.0	2.2
28	5.119	6.959	to	1.84	1.0
29	5.130	5.13	to	0.0	3.0
30	5.612	6.959	to	1.347	6.0
31	6.399	6.959	to	0.56	21.0
				Total	327.60

these reactions.

It was recently noted that Bass and Saleh[104] have measured the (n,p_0) and (n,p_1) cross sections for the energy range from 4.0 to 8.0 MeV. The (n,p_1) cross section was essentially zero for energies below 6.0 MeV and reached a maximum of about 11.0 mb at 7.4 MeV. Because of the preliminary nature of these data and the small cross sections for producing the 1.02 MeV gamma ray, this cross section has not been included in the recommended data.

8. ANGULAR DISTRIBUTION OF SECONDARY GAMMA RAYS

The gamma rays produced by (n,γ) reactions have been assumed to be isotropic. The angular distributions for $(n,n'\gamma)$ gamma rays have been calculated using the MANDY code. The gamma ray transition properties have been used in these calculations along with the neutron transmission coefficients obtained from ABACUS-II calculations. (See Figures A-26 and A-27.)

9. ENERGY DISTRIBUTION OF SECONDARY GAMMA RAYS

The gamma rays that have not been treated as discrete lines have been included in a continuous spectra. The format for these cross sections has been described in Volume I of this report.

I. L. Morgan, et al[105] have measured the energy distributions of gamma rays produced by nonelastic reactions for 14 MeV neutrons. This spectrum covered the gamma ray energy range from 0.5 to 6.5 MeV. This measurement has been used as the basis for the recommended data for 14 MeV neutrons. This same basic spectral shape has been used for both higher and lower incident energy neutrons. However, the high energy end of the spectra were modified to account for the increase in gamma ray energies as excitation energy increased.

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(102)   C. Daum, Nucl. Phys. 45, 273 (1963).

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        (1965).

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        Euratom Community for the Period January 1 to December 31, 1965,"
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        Texas Nuclear Corporation (1963).

APPENDIX

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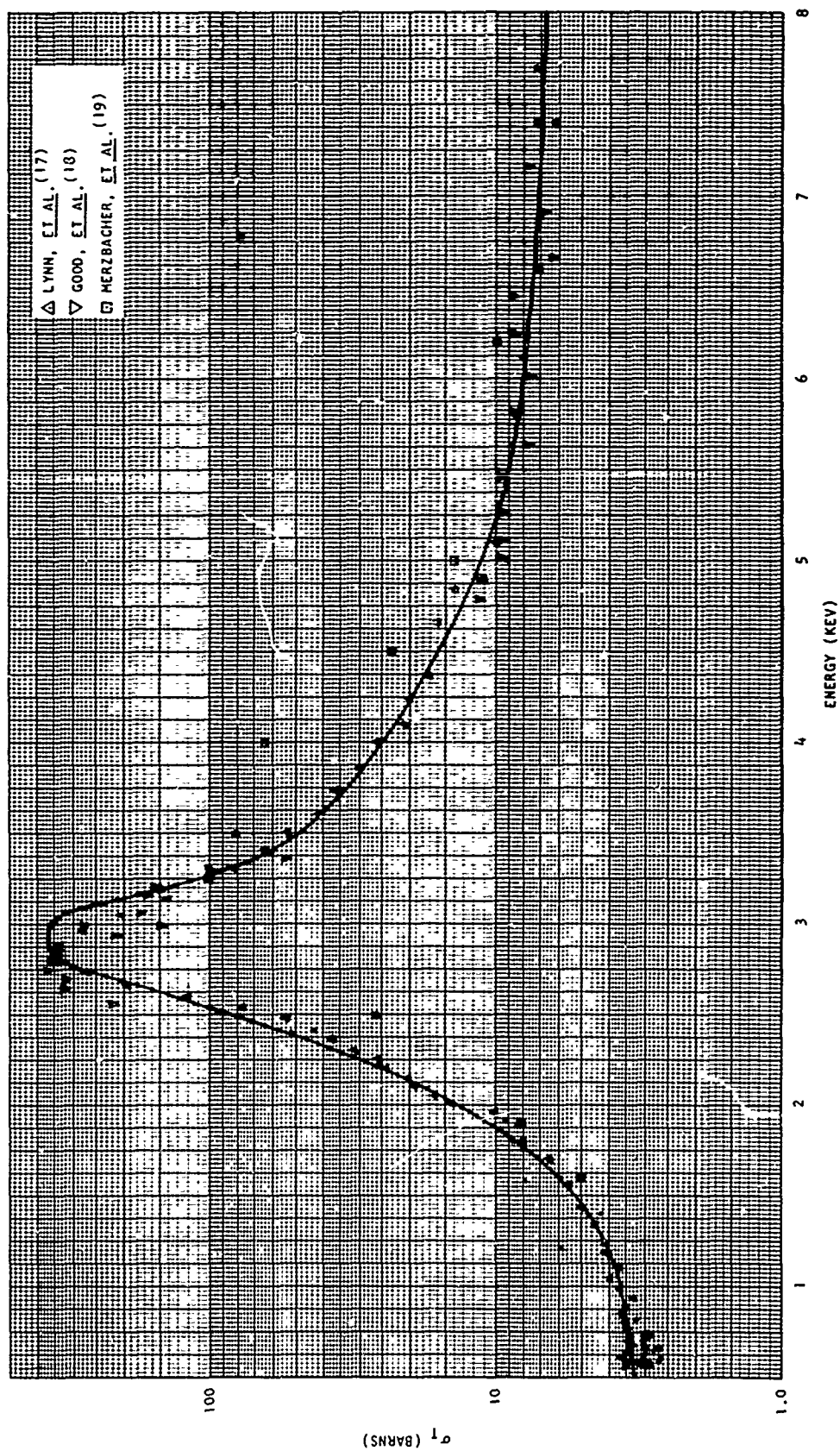
Figure A-1. Sodium total cross section
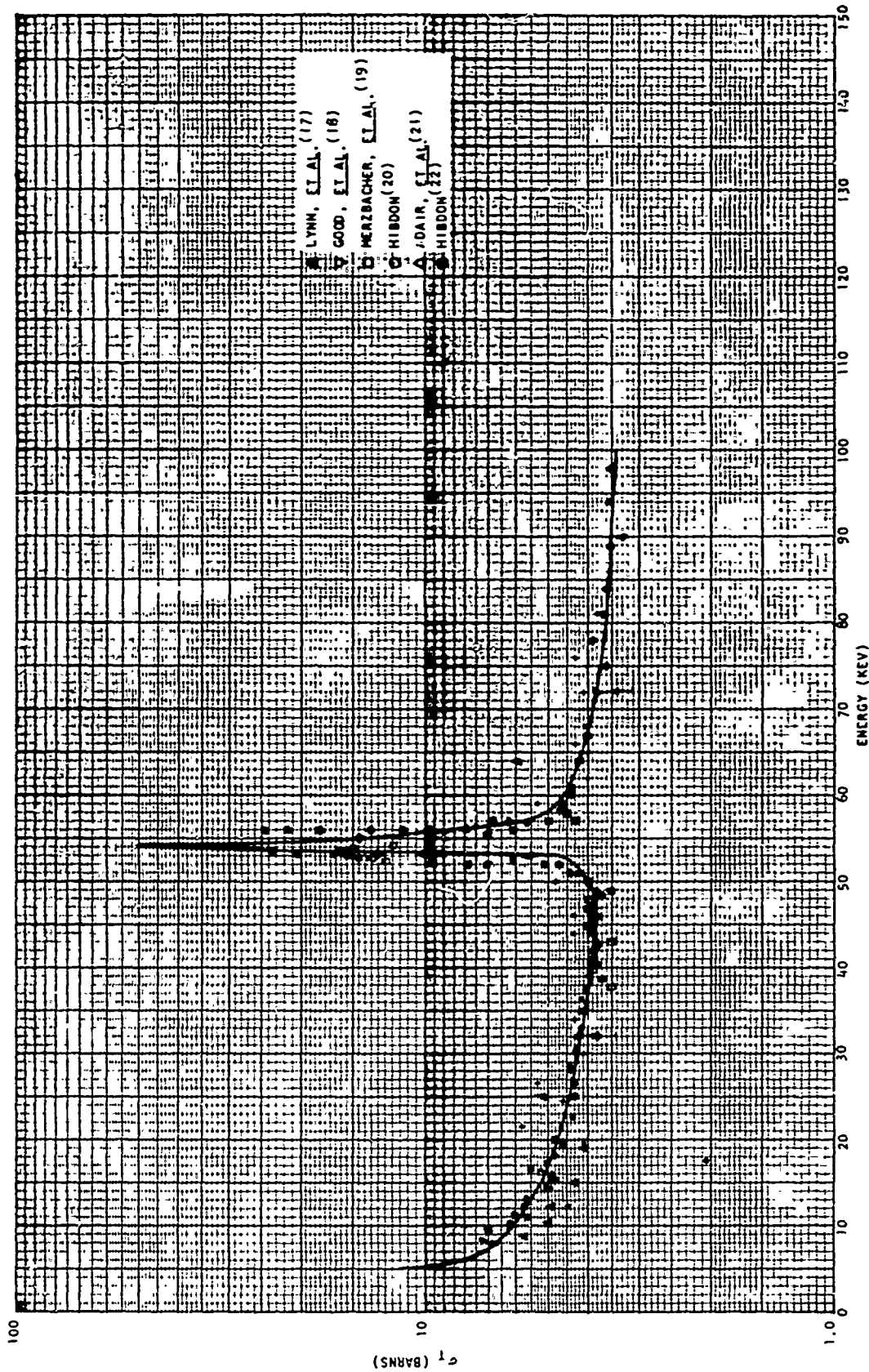
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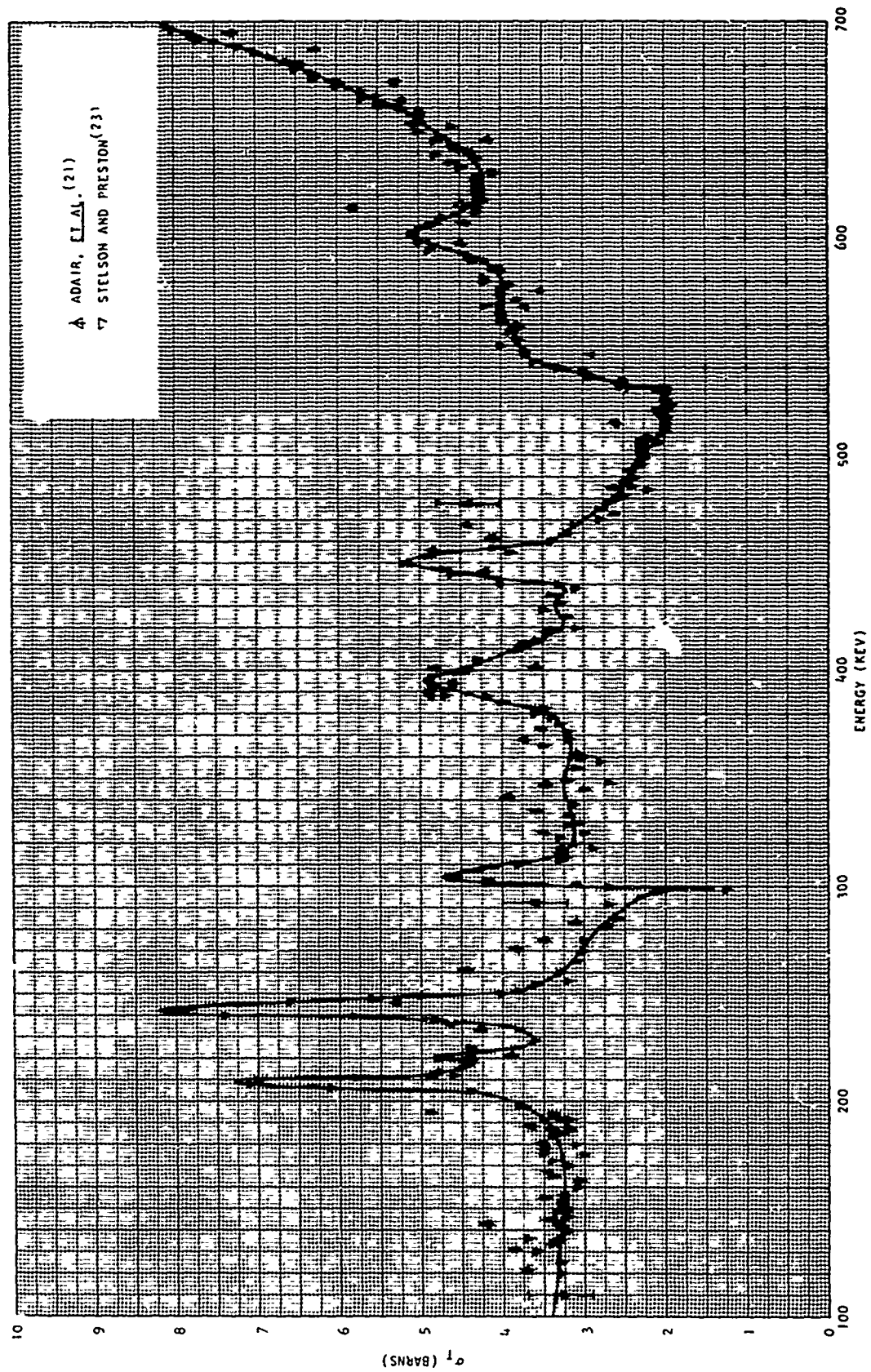
Figure A-3. Sodium total cross section

A-5
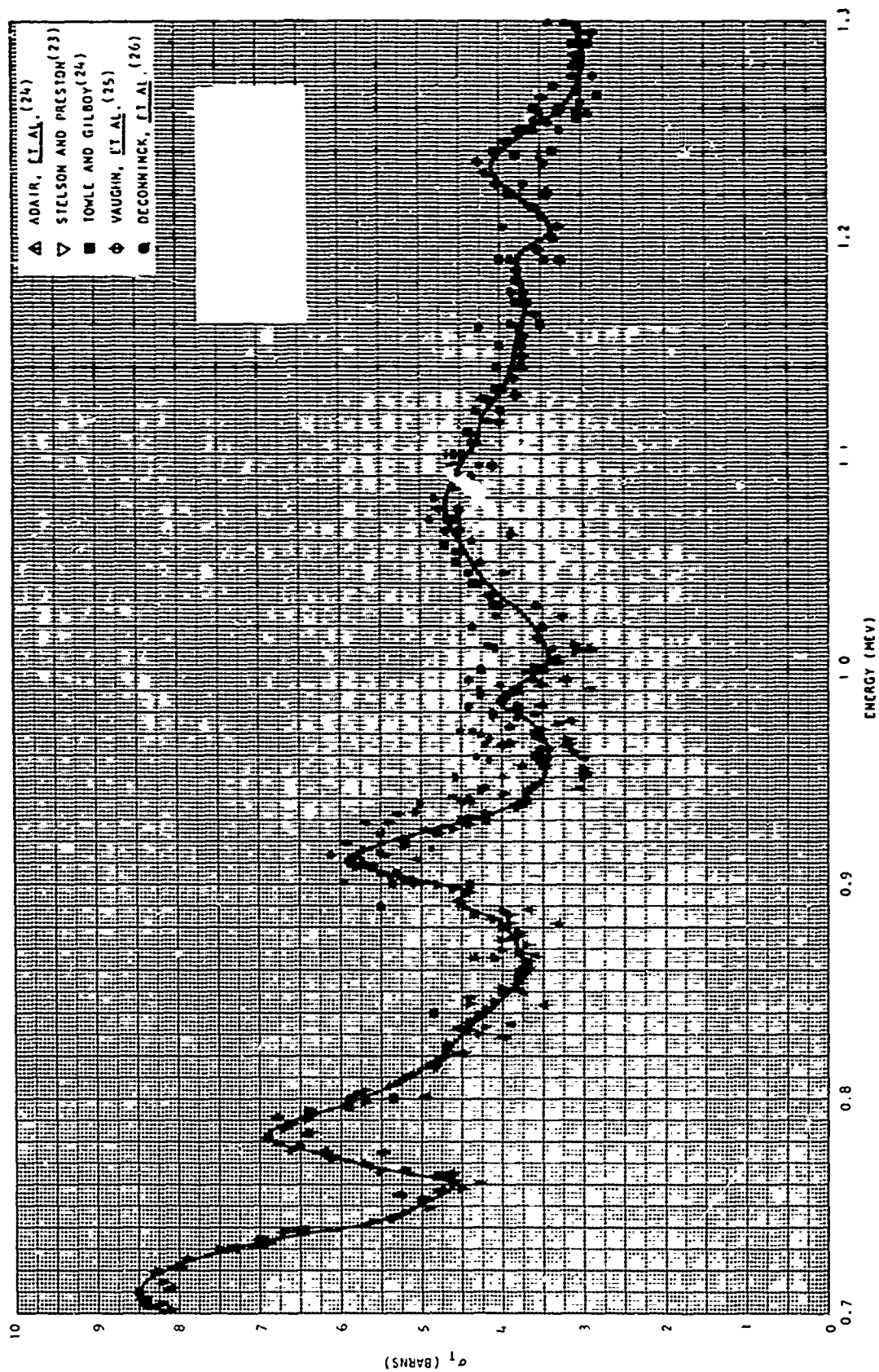
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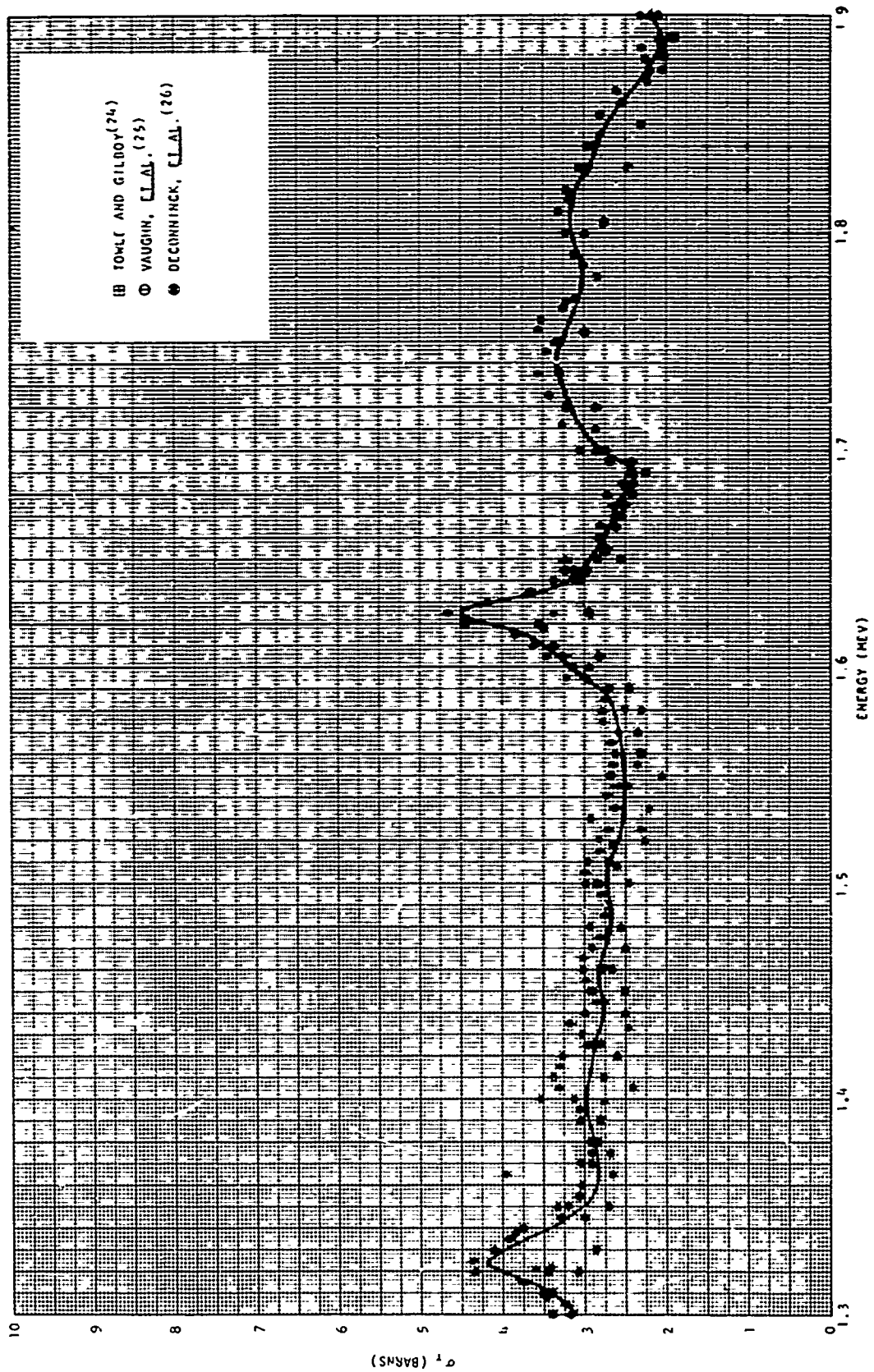
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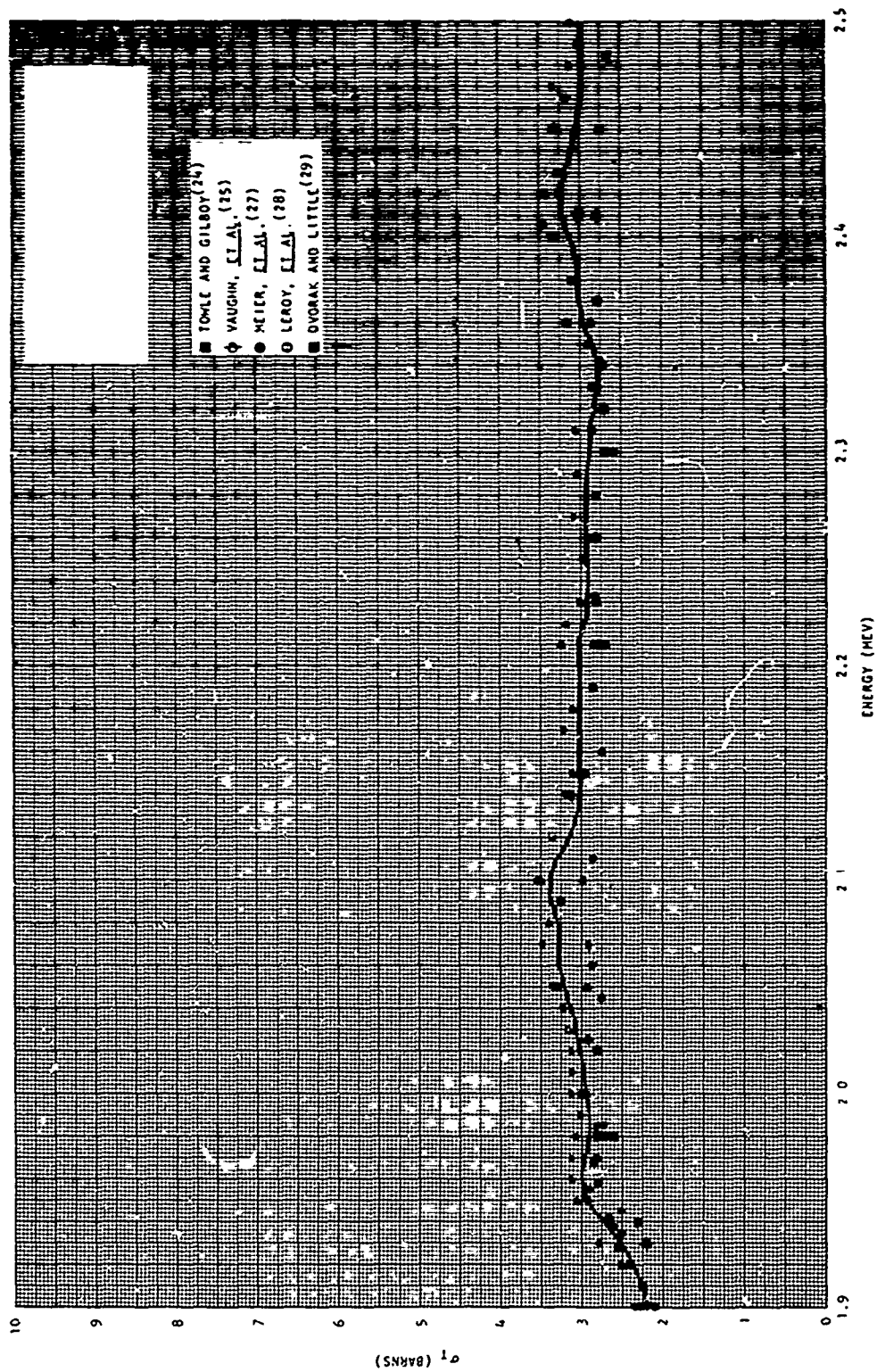
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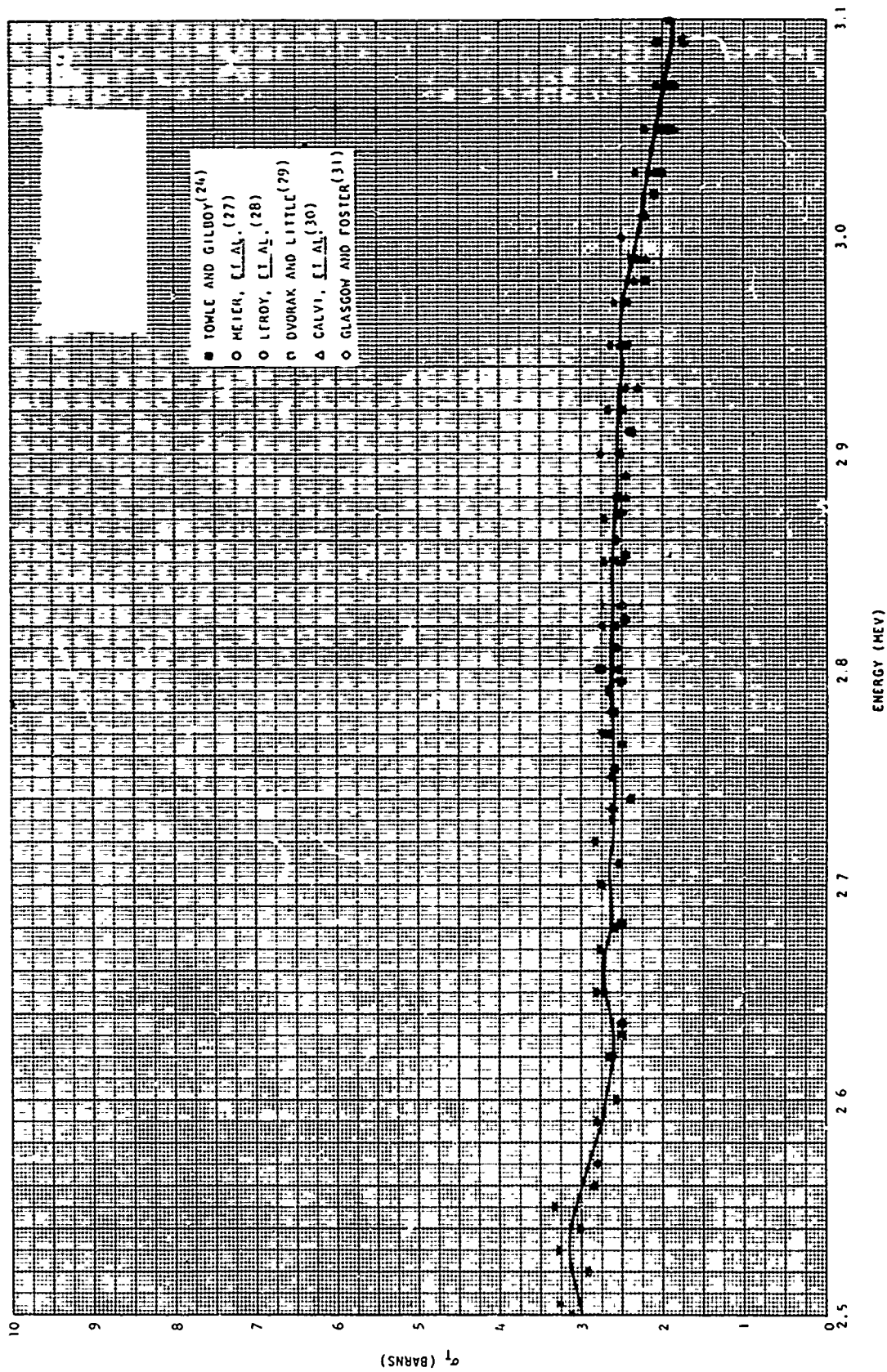
Figure A-7. Sodium total cross section
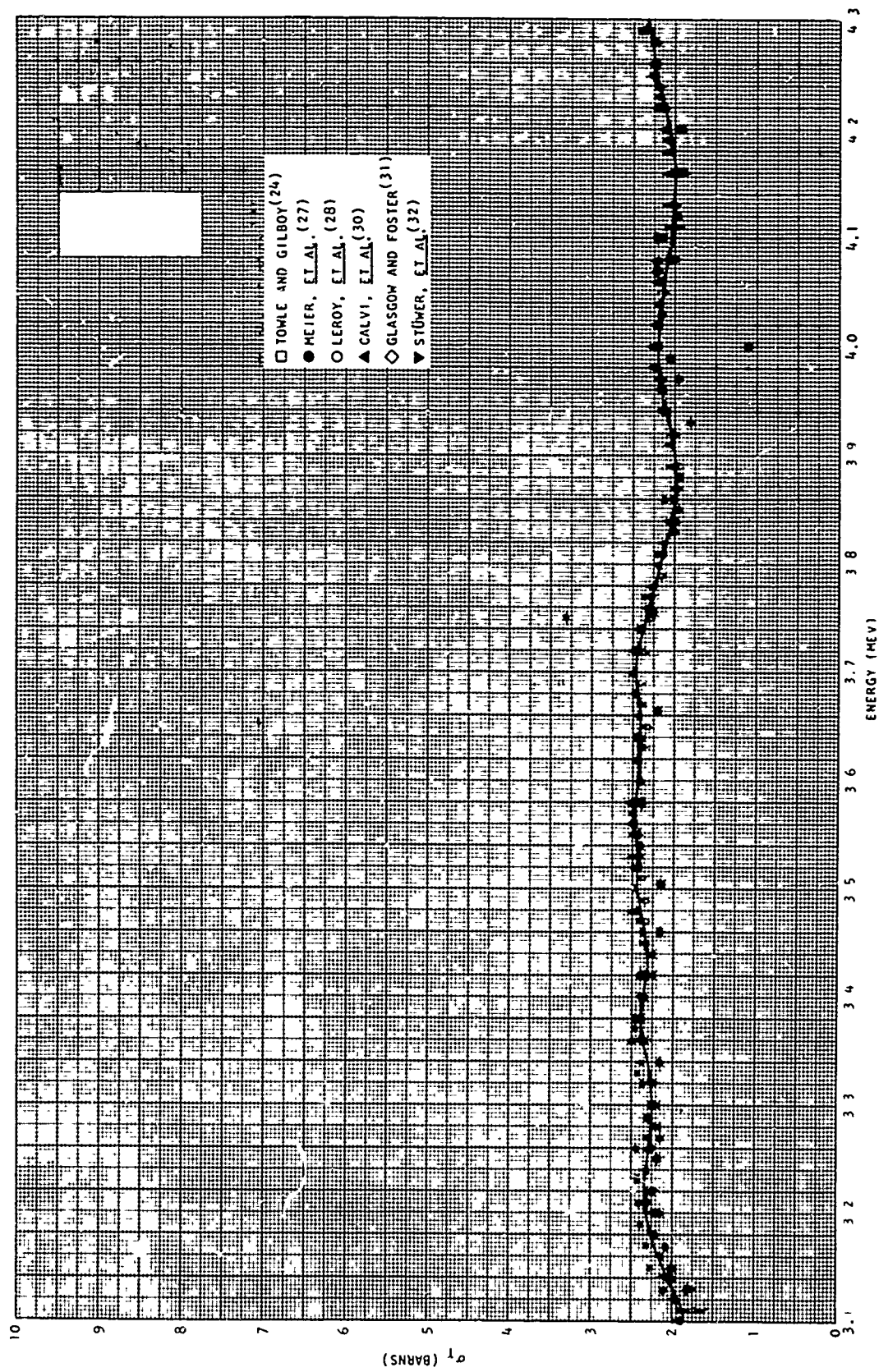
Figure A-8. Sodium total cross section
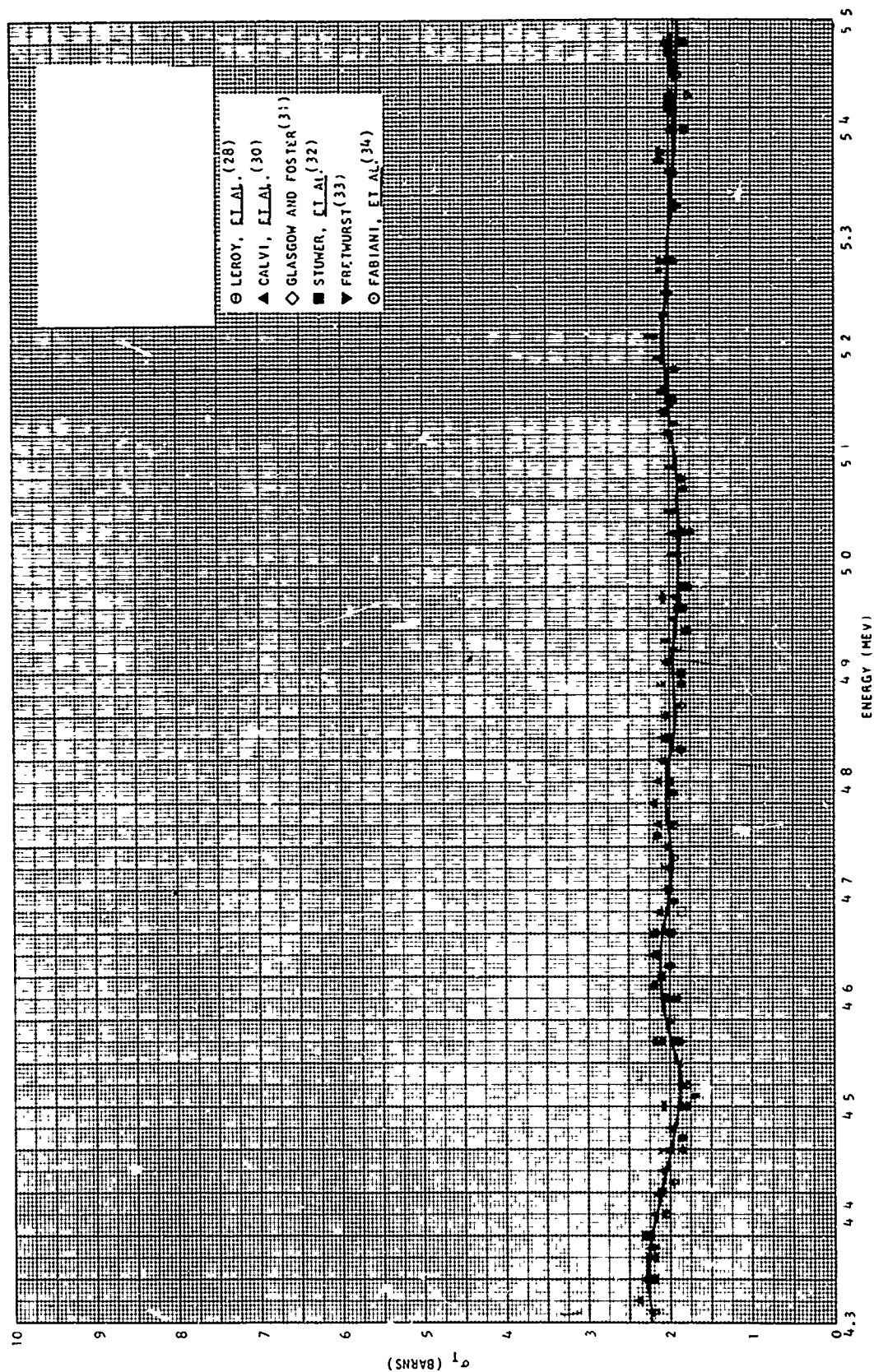
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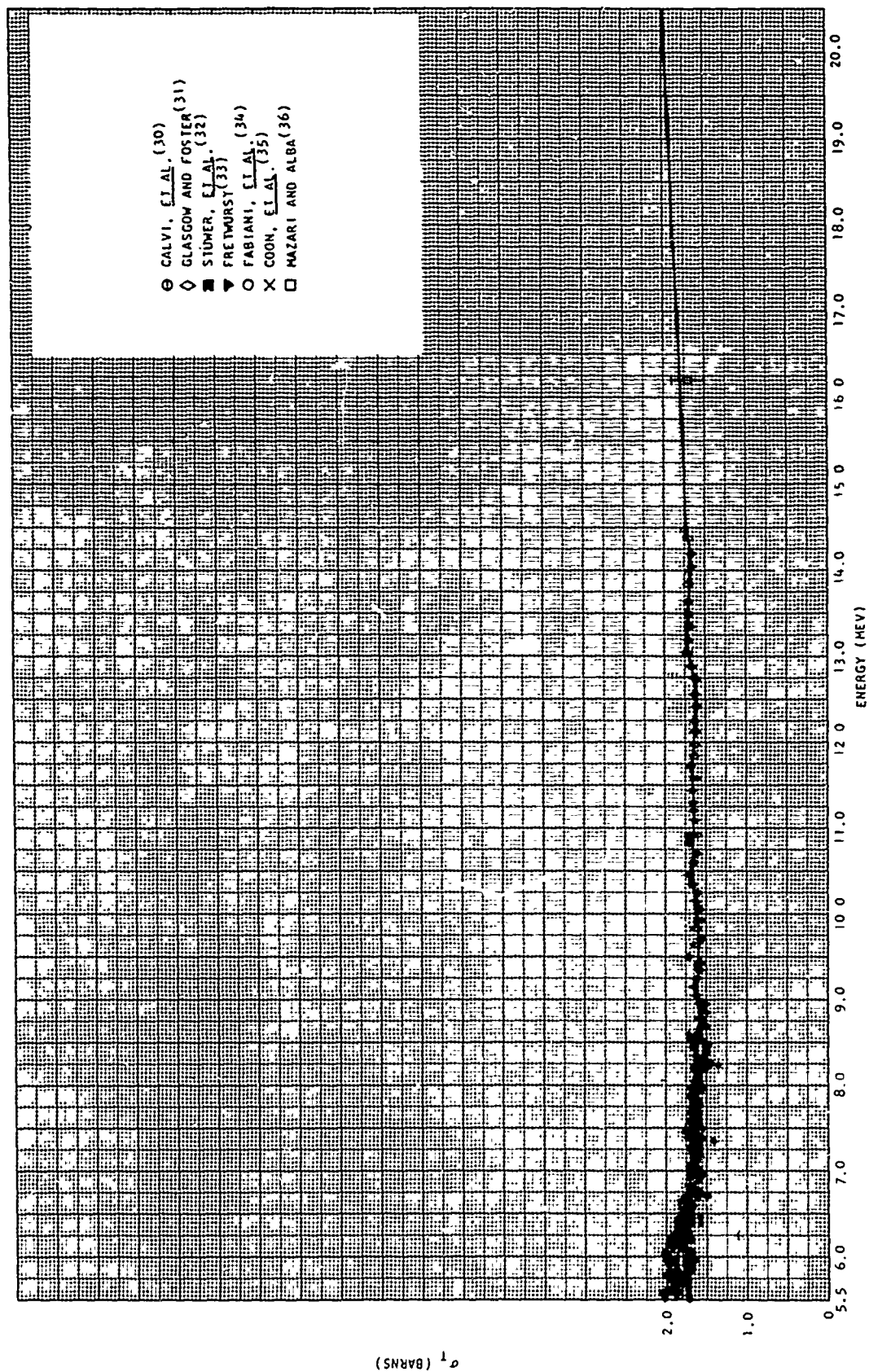
Figure A-10. Sodium total cross section

LEGEND:
⊕ CALVI, ET AL. (30)
◇ GLASGOW AND FOSTER[31]
■ STÜMER, ET AL. (32)
▼ FRETWURST[33]
○ FABIANI, ET AL. (34)
✕ COON, ET AL. (35)
□ MAZARI AND ALBA[36]

ENERGY (MEV)

σ_T (BARNS)
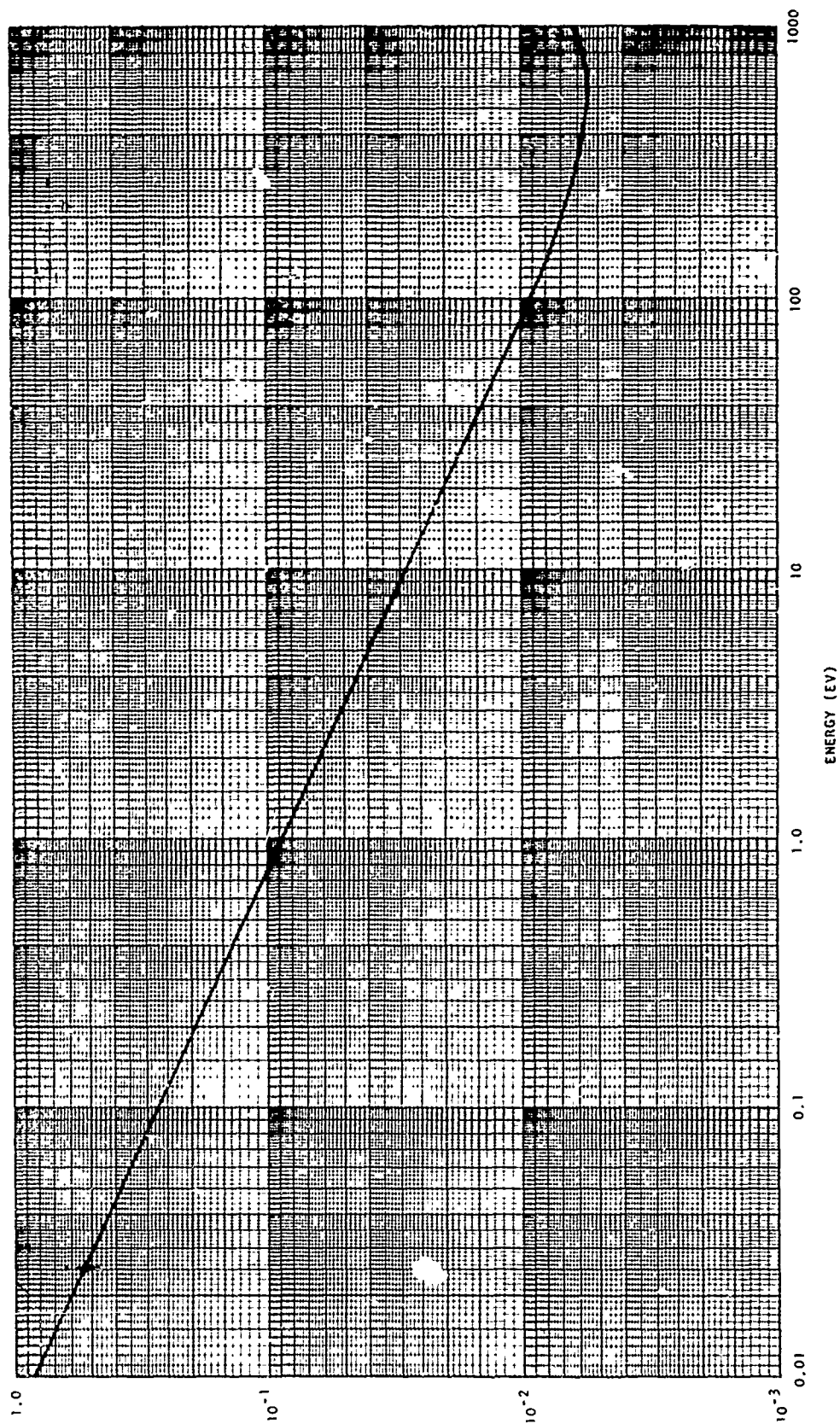
Figure A-11. Sodium (n, γ) cross section
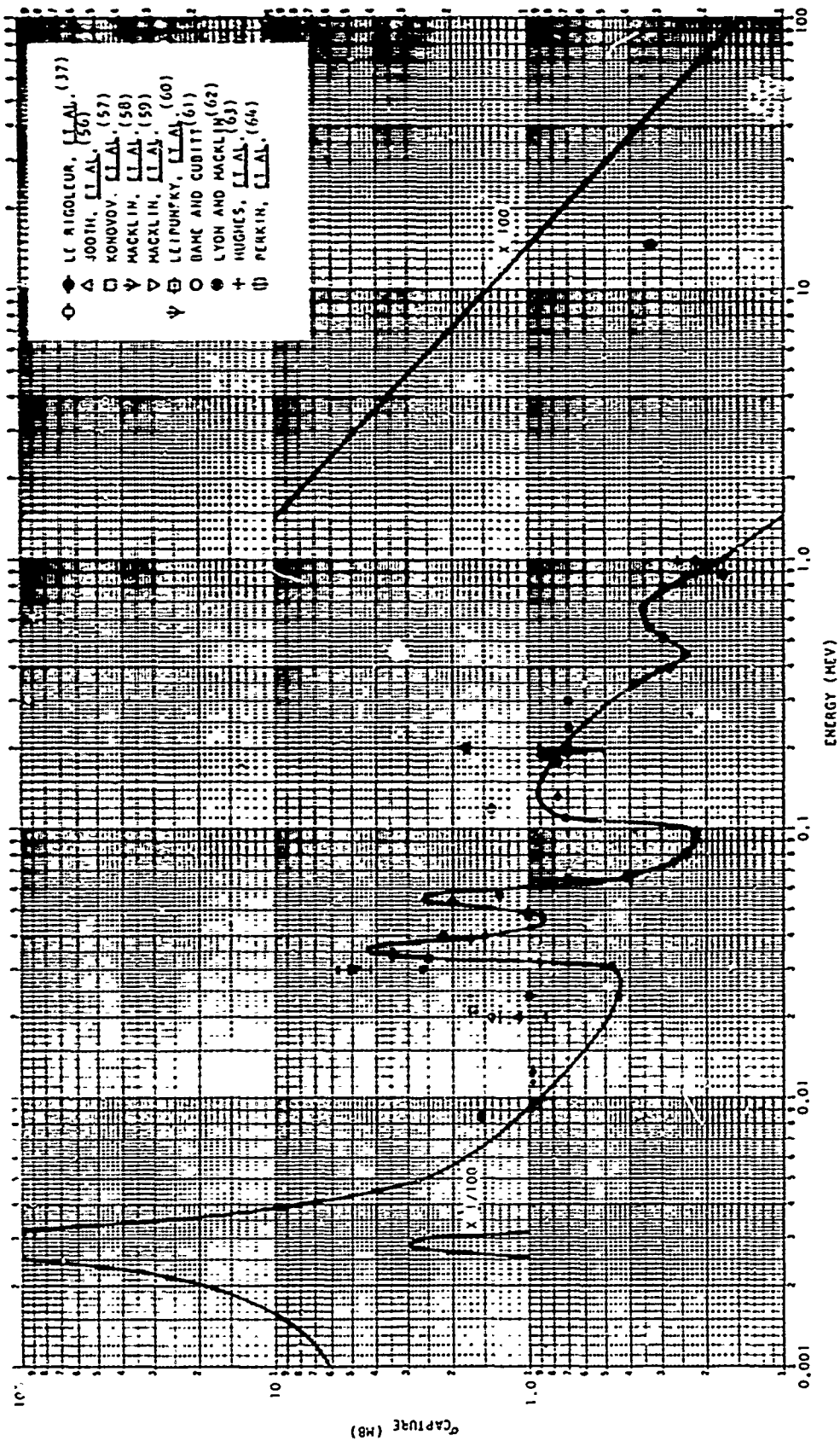
Figure A-12. Sodium (n, γ) cross section
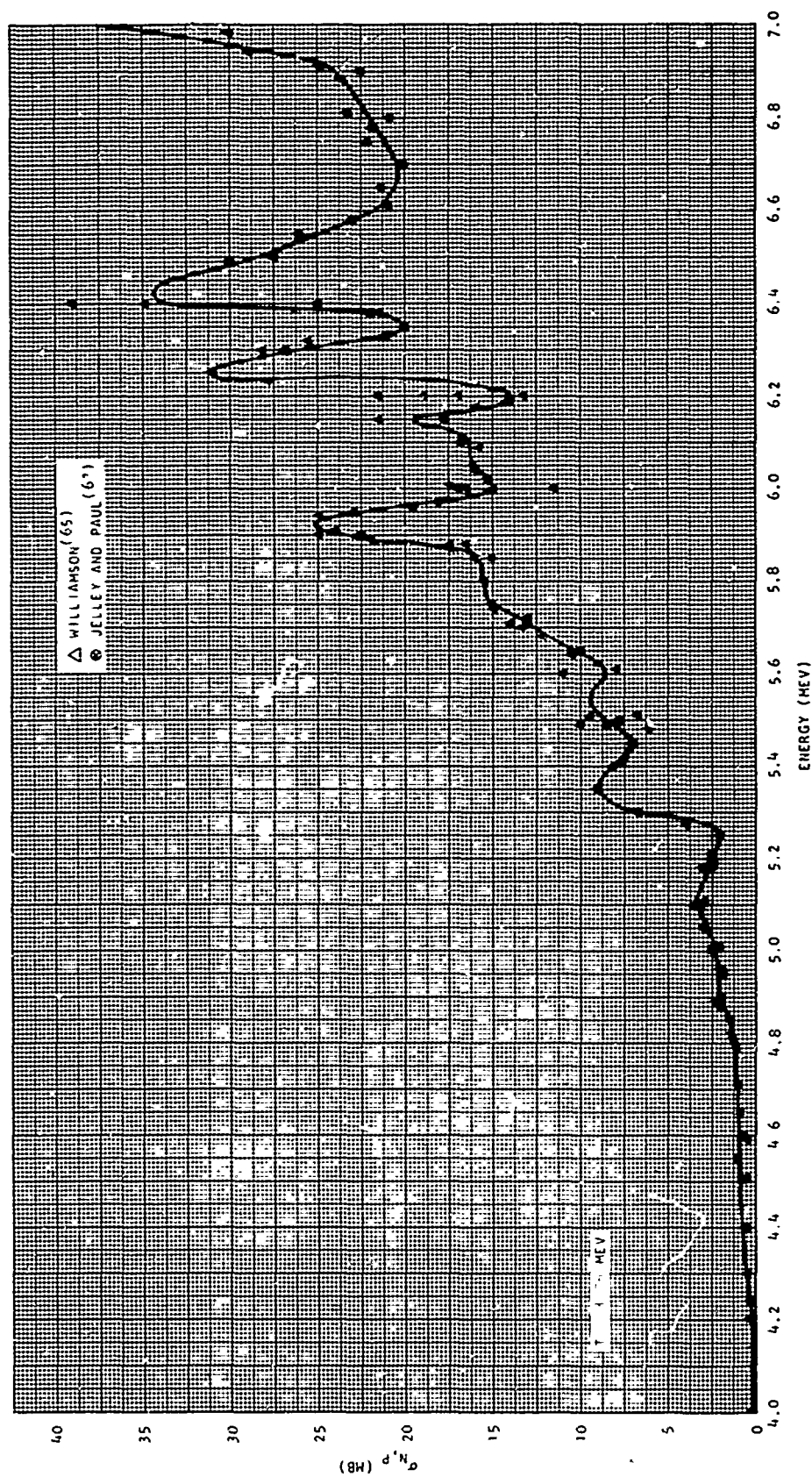
Figure A-13. Sodium (n,p) cross section
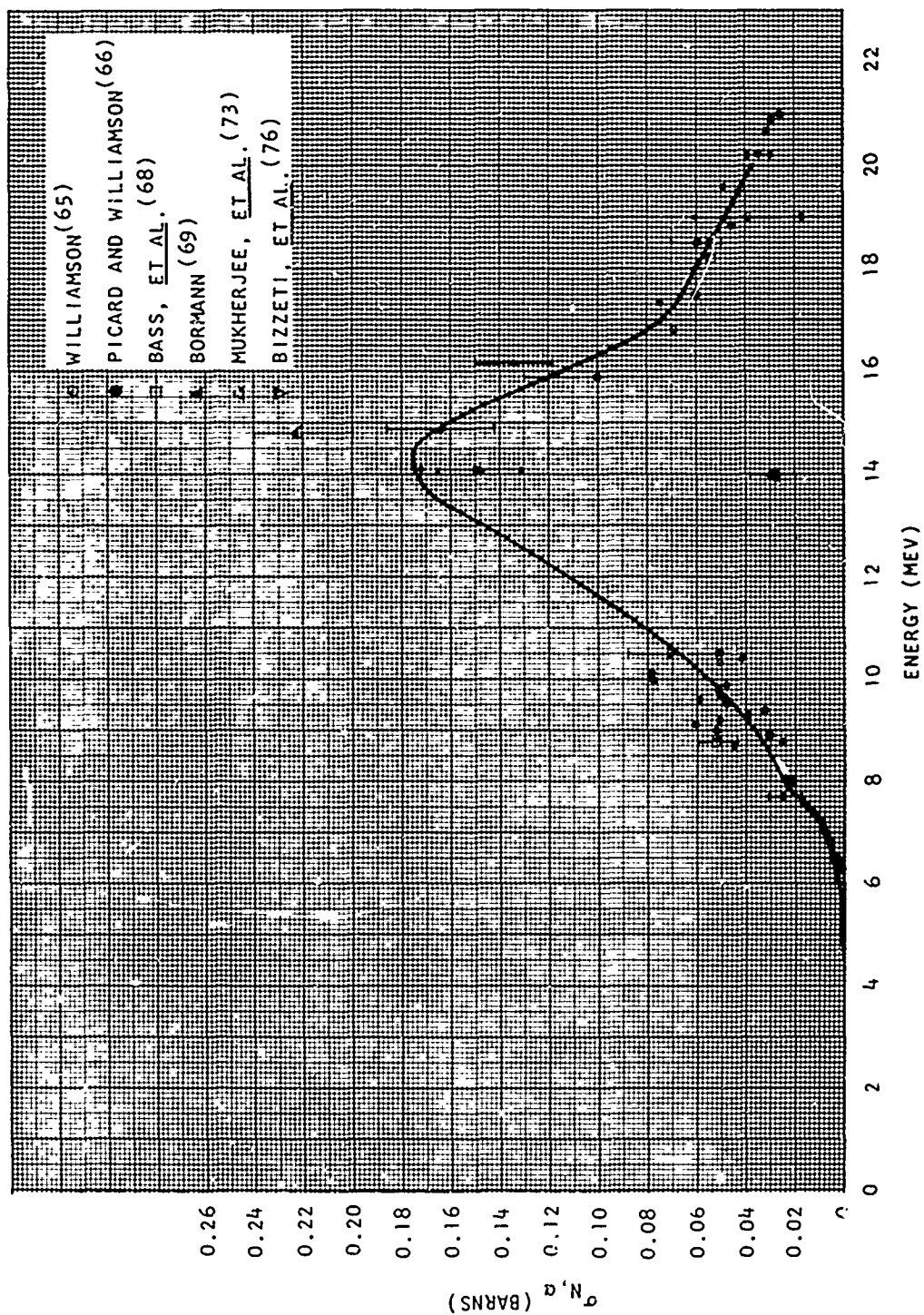
Figure A-15. Sodium (n,α) cross section
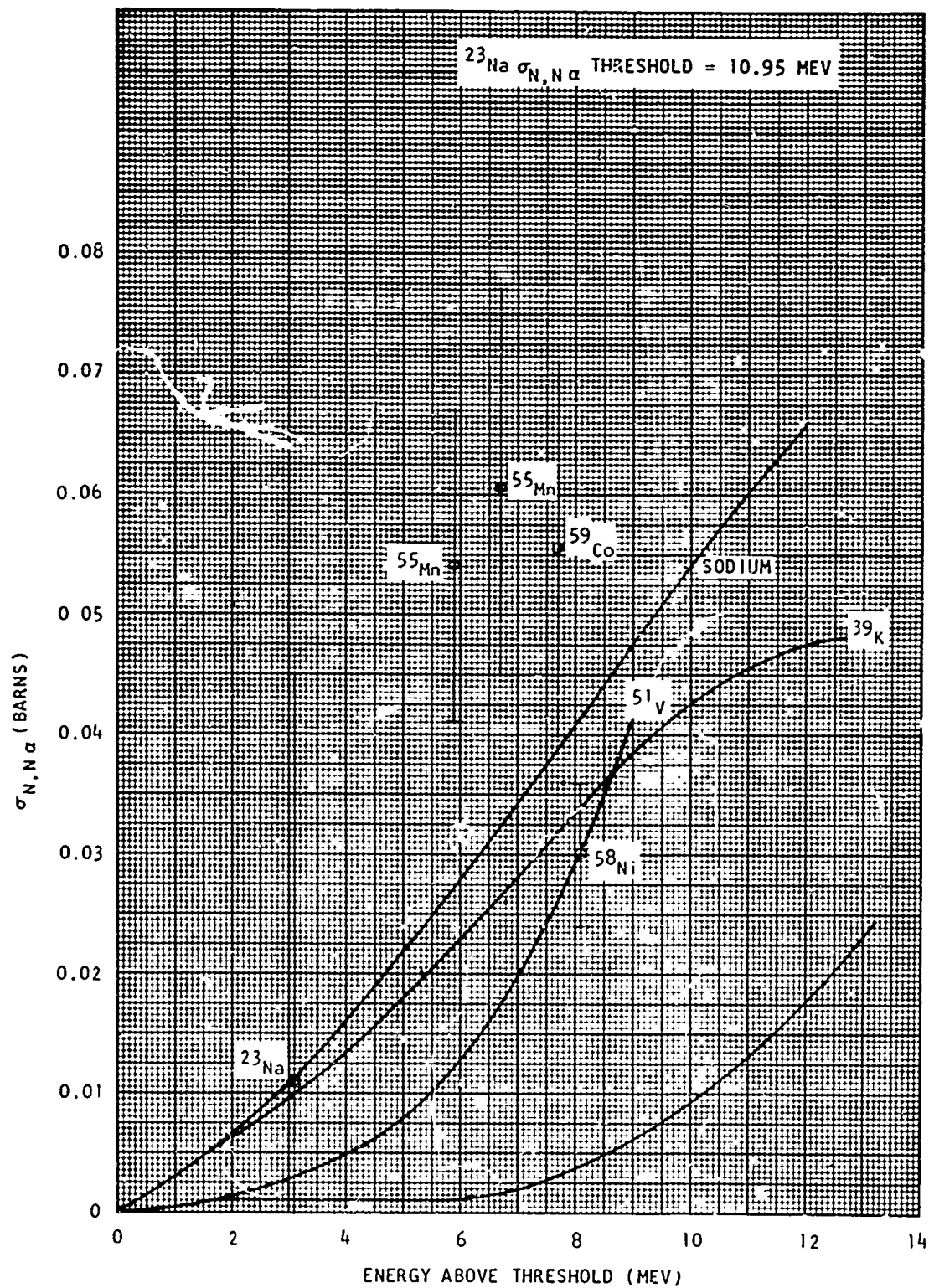
Figure A-16. Sodium (n,nα) cross section

A-18
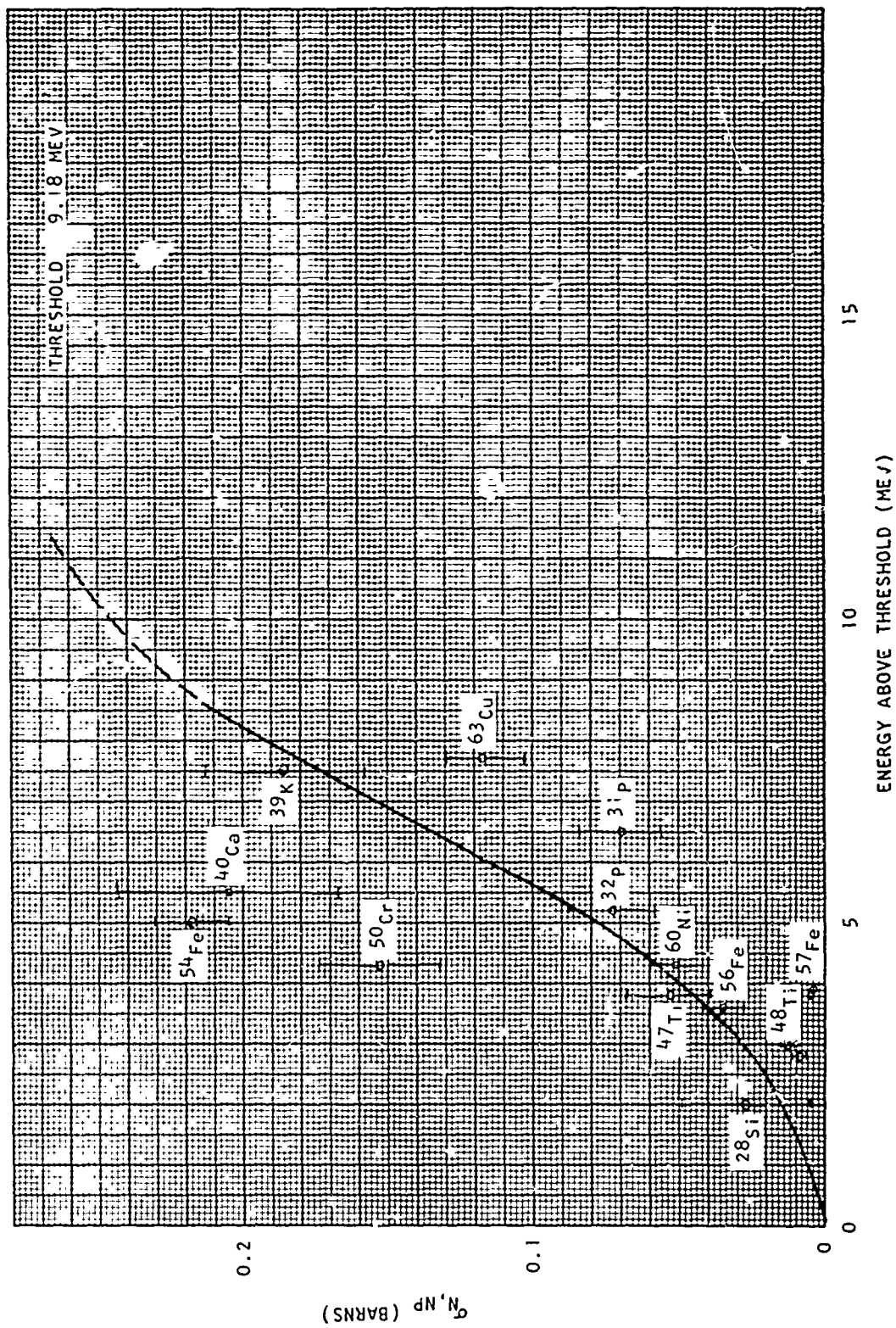
Figure A-17. Sodium (n,np) cross section

A-19
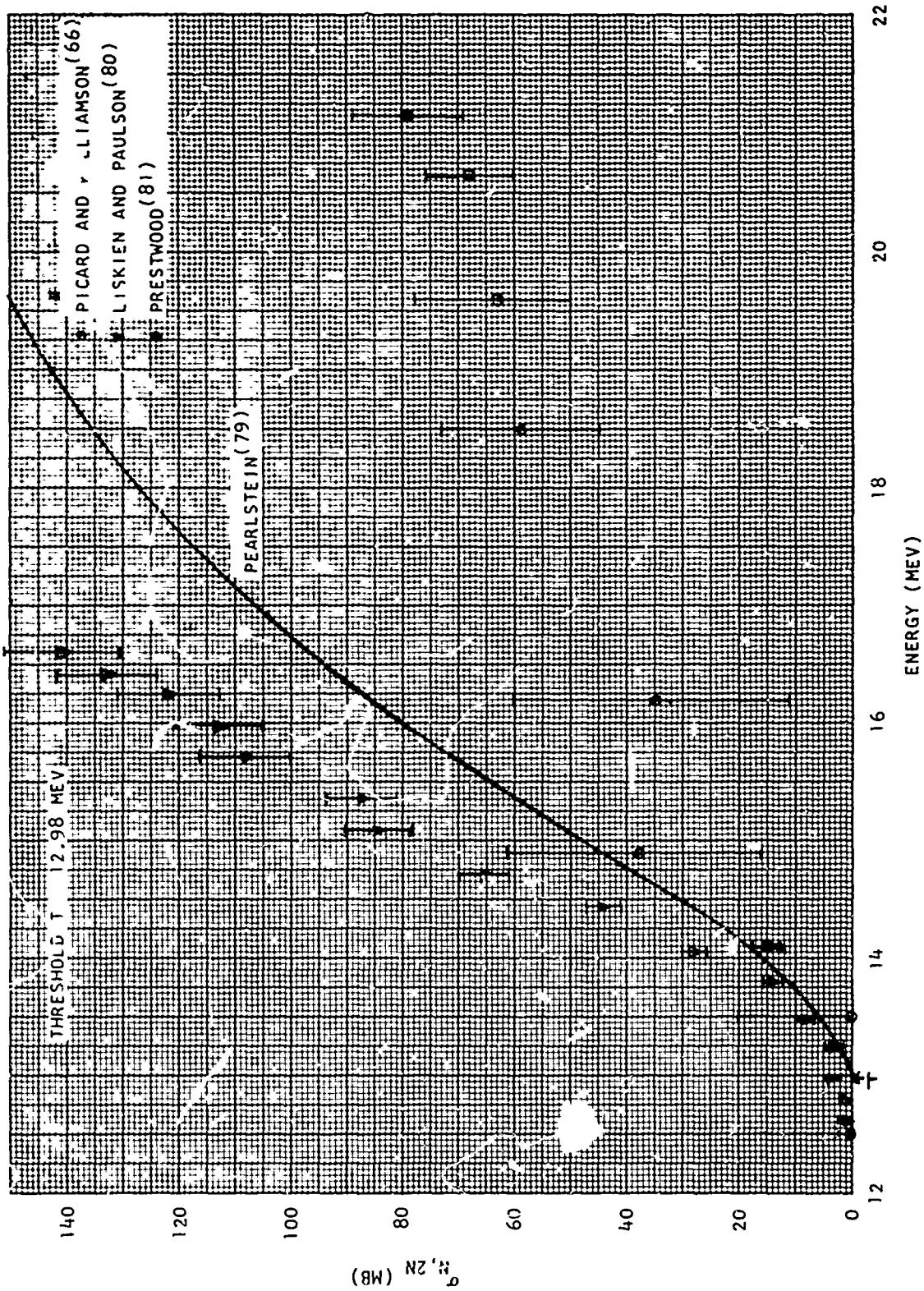
Figure A-18. Sodium (n,2n) cross section
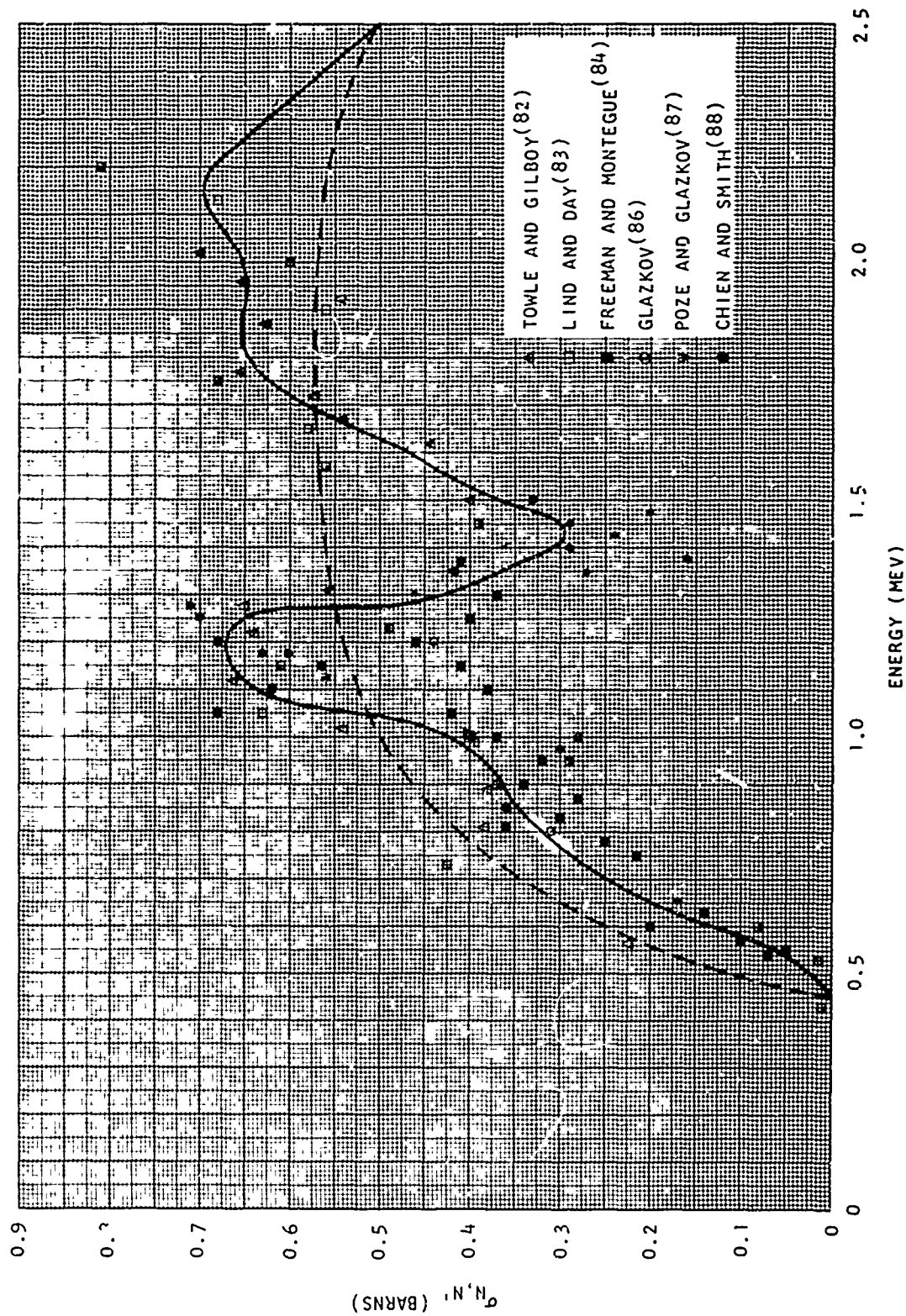
Figure A-19. Sodium inelastic scattering, $\sigma_{n,n'}$ (0.438 MeV level)

TOWLE AND GILBOY[82]
LIND AND DAY[83]
FREEMAN AND MONTEGUE[84]
GLAZKOV[86]
POZE AND GLAZKOV[87]
CHIEN AND SMITH[88]

ENERGY (MEV)

$\sigma_{N,N'}$ (BARNS)
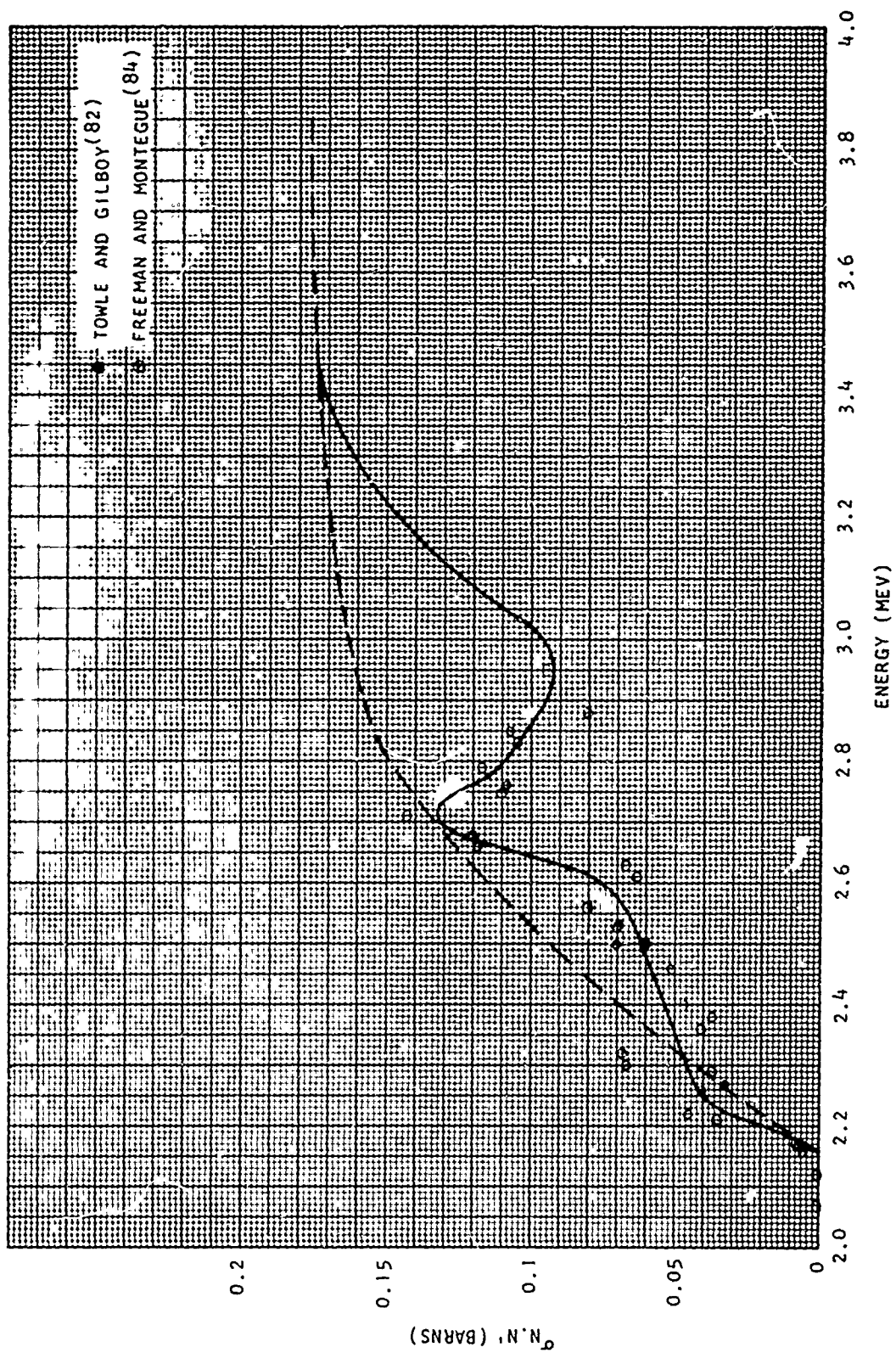
Figure. A-20. Sodium inelastic scatterins, $\sigma_{n,n'}$ (2.08 MeV level)
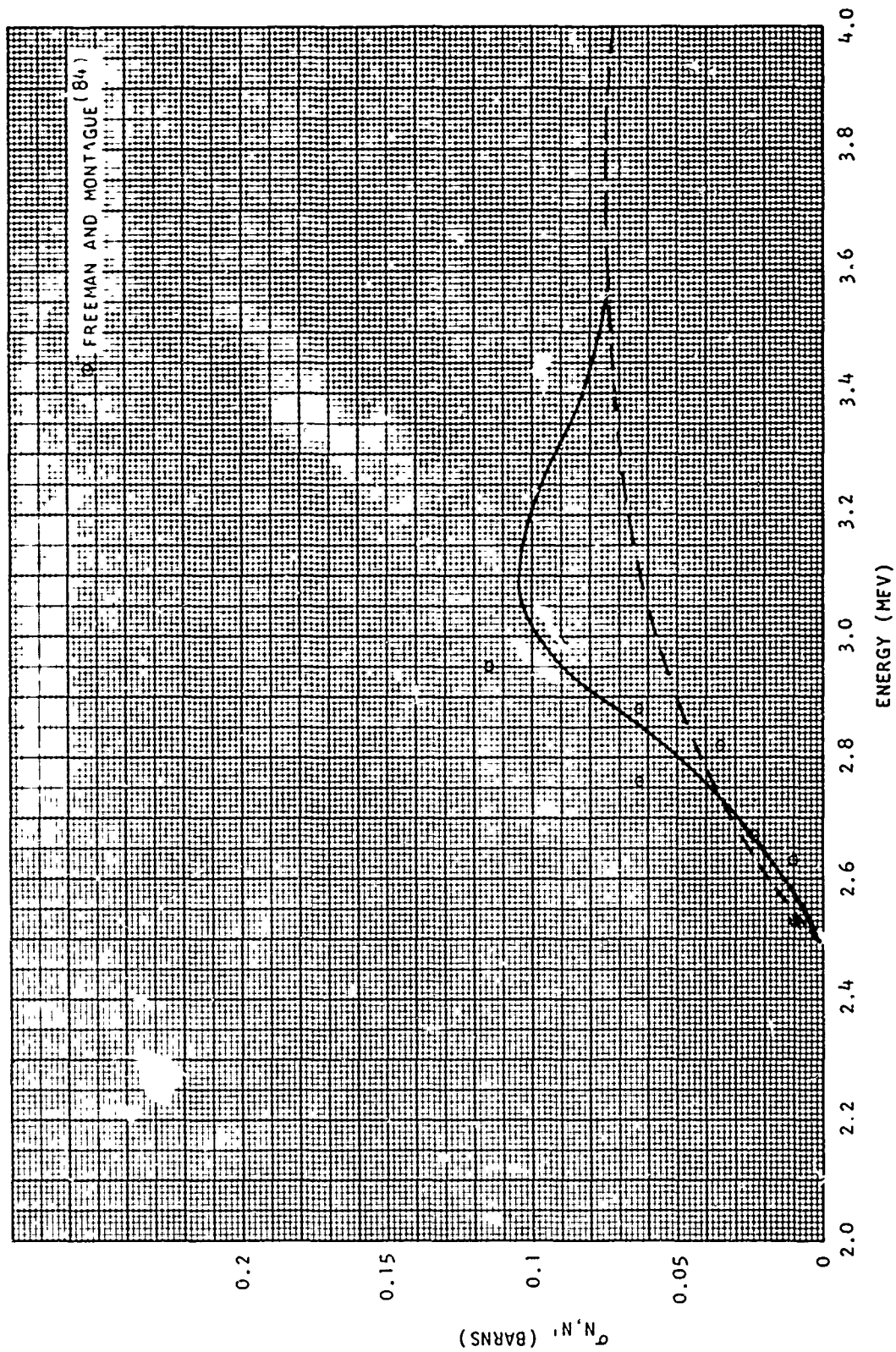
Figure A-21. Sodium inelastic scattering, $\sigma_{n,n'}$, (2.39 MeV level)

A-23
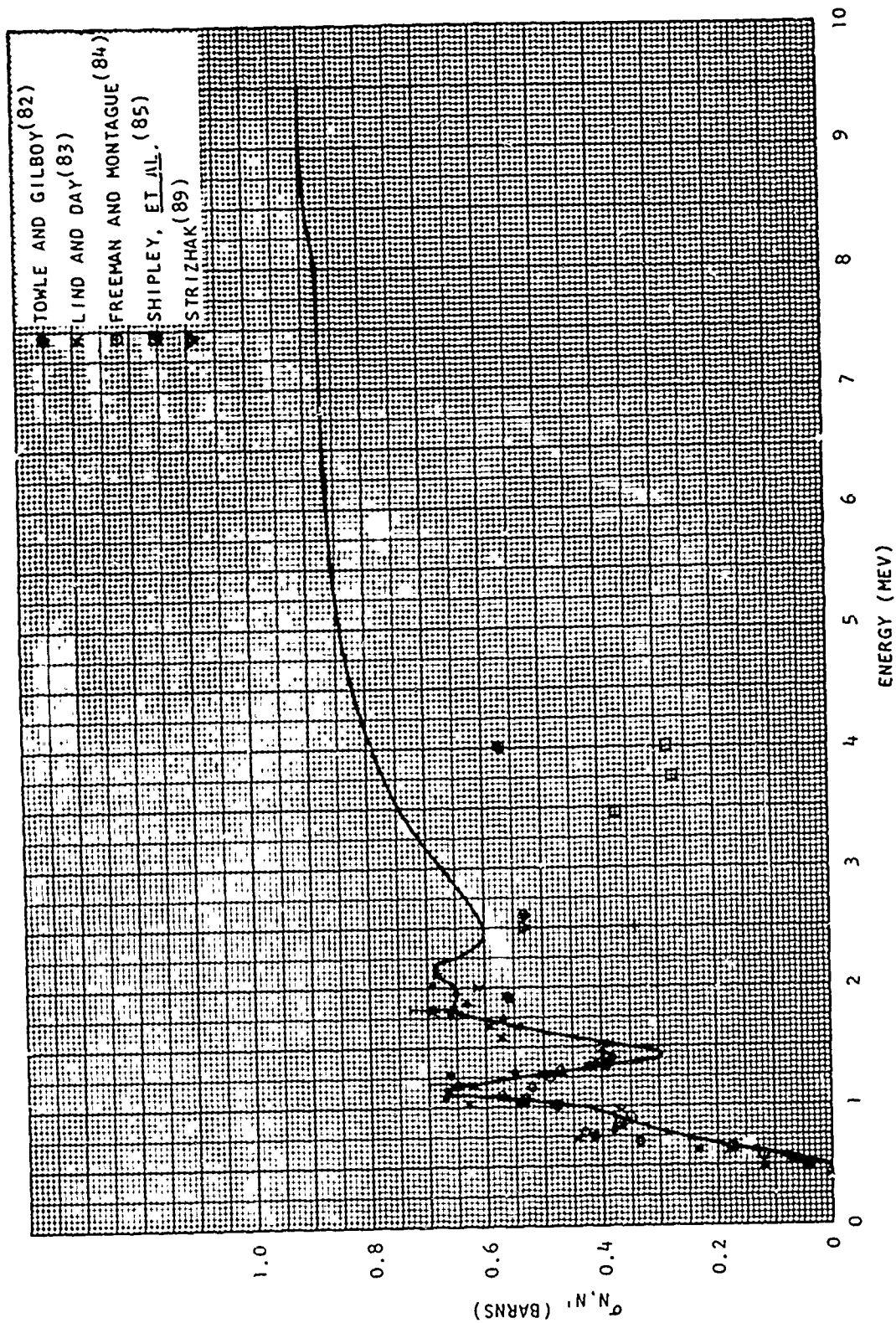
Figure A-22. Sodium total inelastic scattering
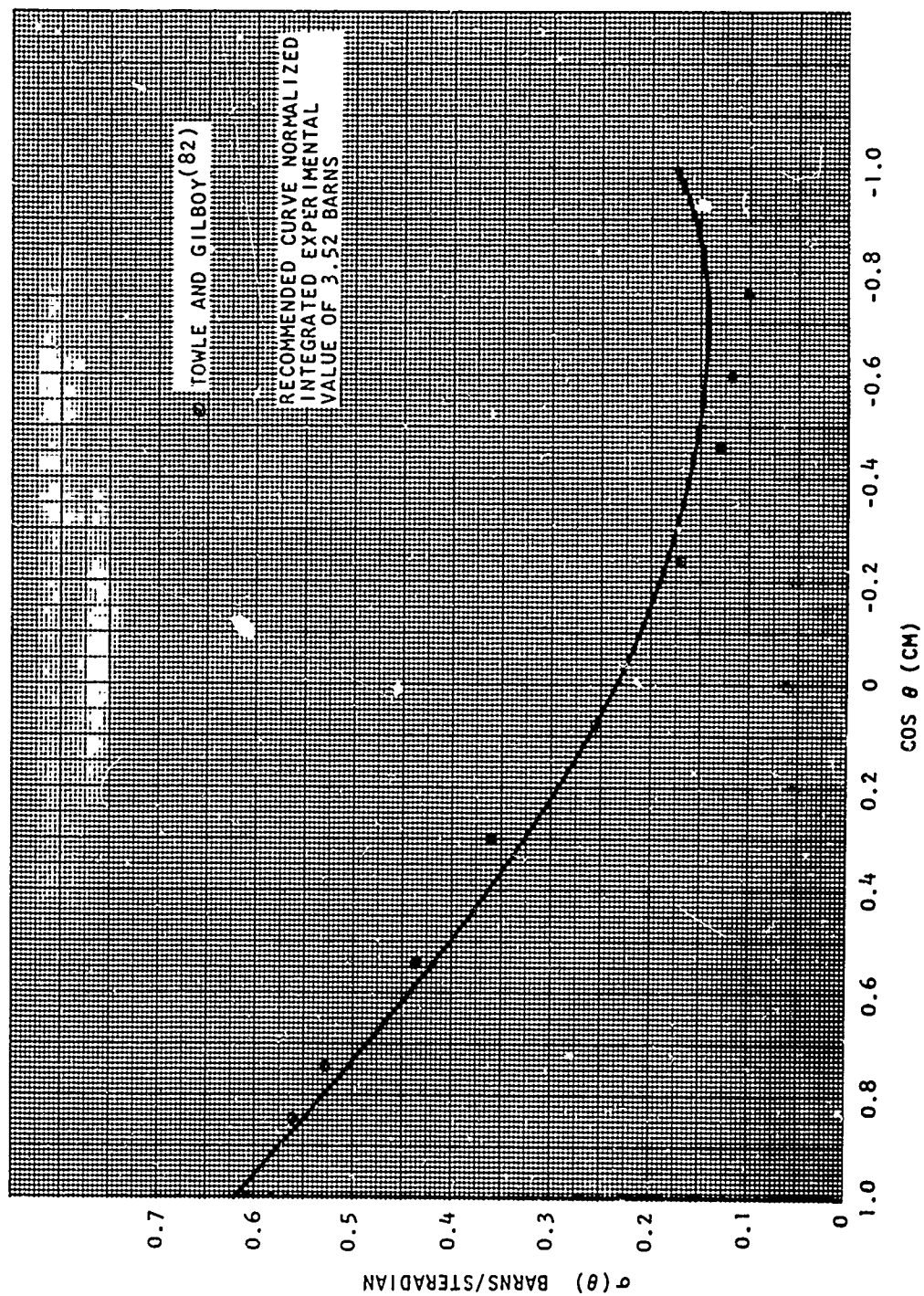
Figure A-23. Angular distribution of elastically scattered neutrons, $E_n = 0.93$ MeV
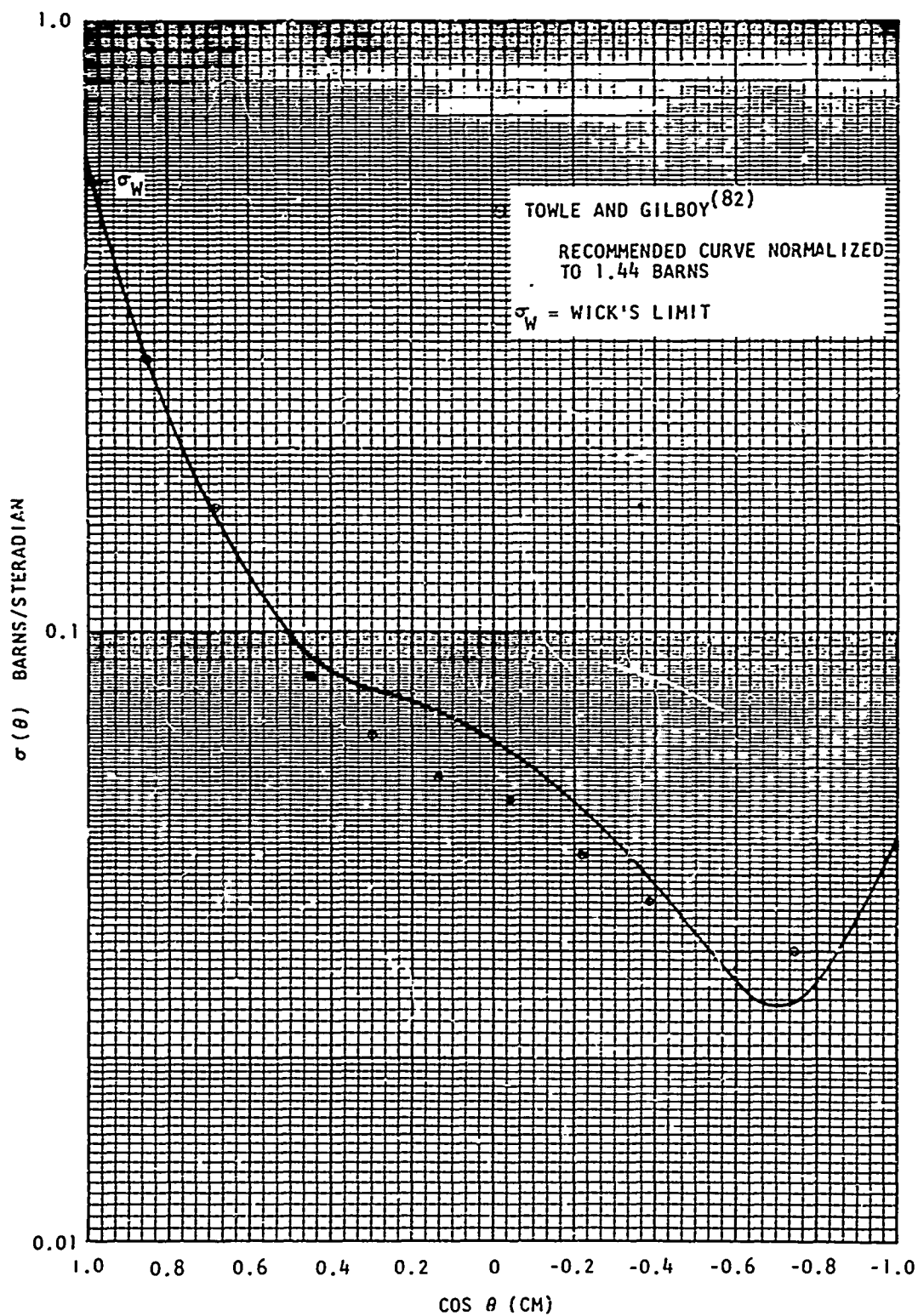
Figure A-24. Angular distribution of elastically scattered neutrons, $E_n = 3.97$ MeV

A-26

RECOMMENDED CURVE
NORMALIZED TO 1.0 BARN

σ(θ) RELATIVE VALUES

COS θ (CM)
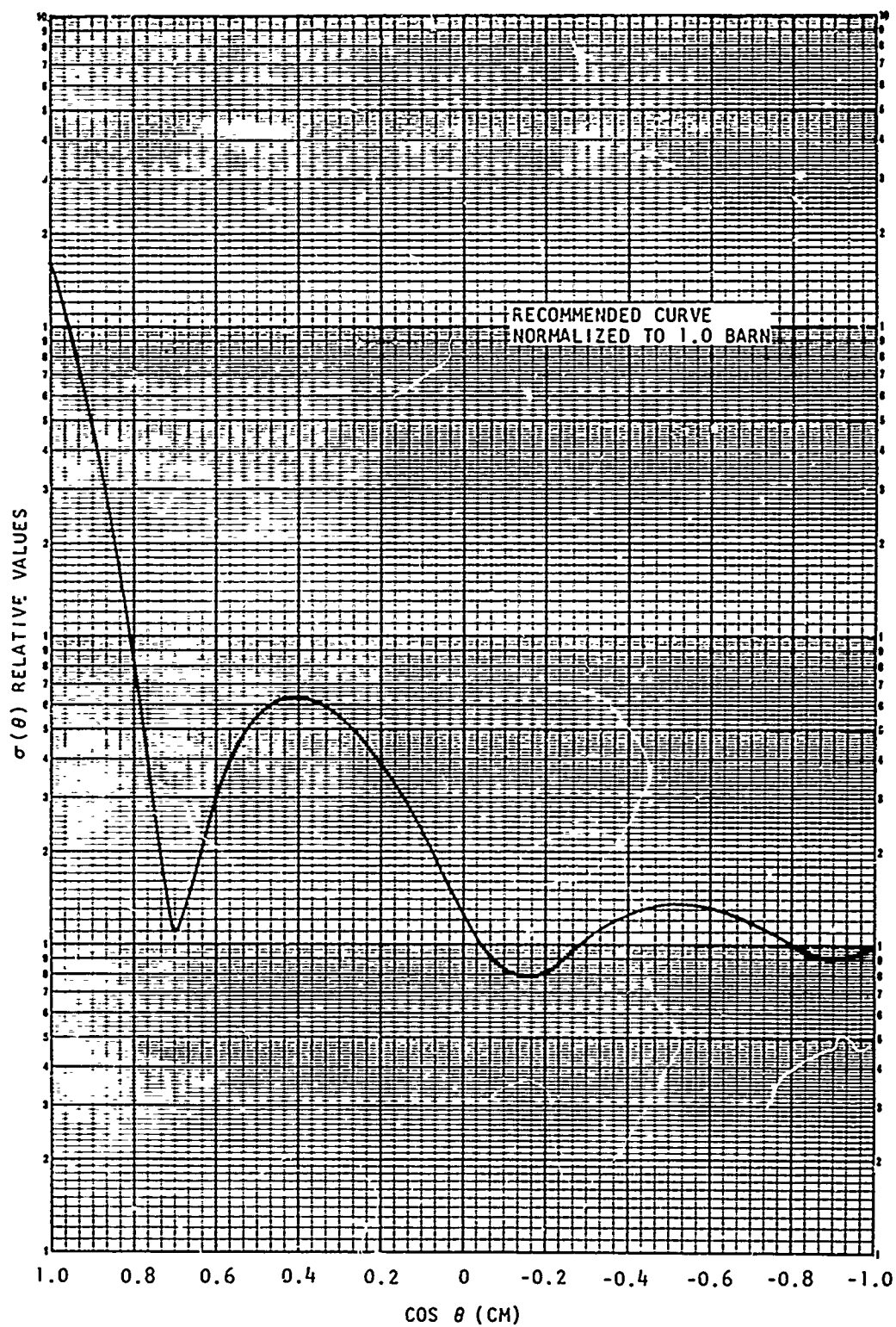
Figure A-25. Angular distribution of elastically scattered neutrons,
E_n = 14.0 MeV

A-27
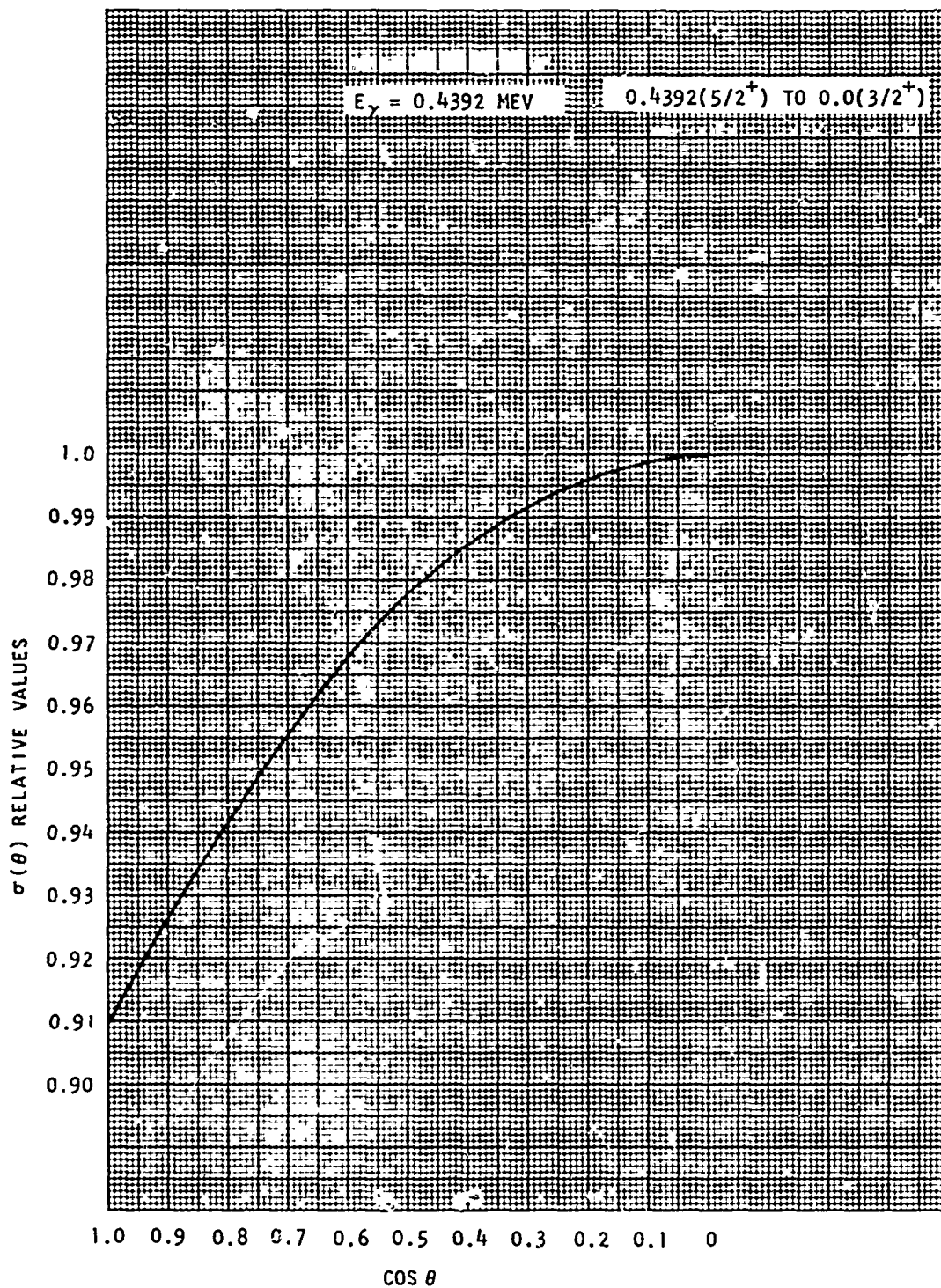
Figure A-26. Angular distribution of n,n' gamma ray, $E_n = 0.46$ MeV

A-28
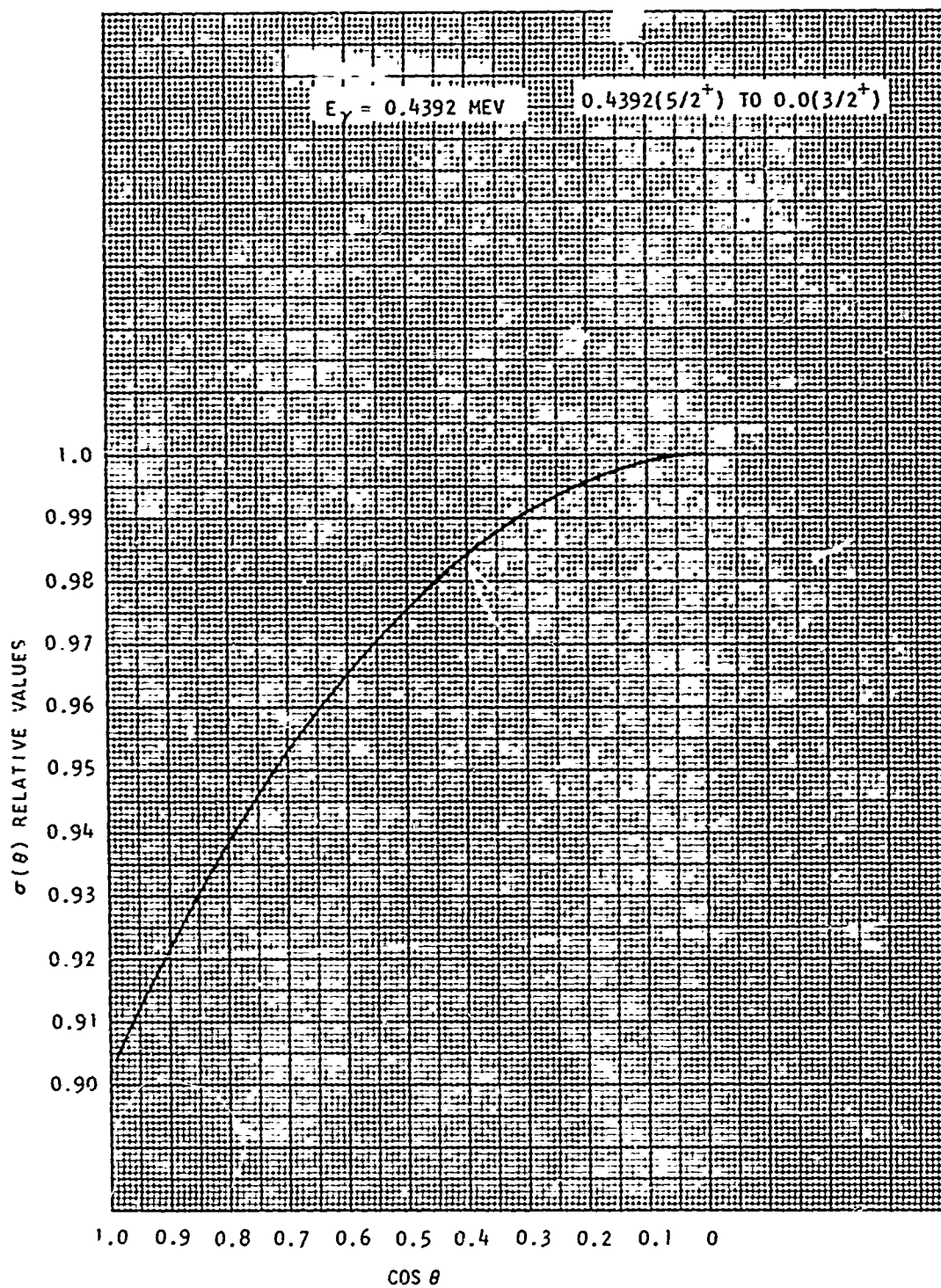
Figure A-27. Angular distribution of n,n' gamma rays, E_n = 5.0 MeV

A-29

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ENERGY (MEV)	TOTAL (BARNS)	ELASTIC (BARNS)	NON-EL (BARNS)	INELASTIC (BARNS)	N,2N (BARNS)	N,N ALPHA (BARNS)	N,N P (BARNS)	N,GAMMA (BARNS)	N,P (BARNS)	N,ALPHA (BARNS)
1.000-08	4.1100+00	3.2650+00	8.450-01	0.000	0.000	0.000	0.000	8.450-01	0.000	0.000
2.000-08	3.8600+00	3.2600+00	6.000-01	0.000	0.000	0.000	0.000	6.000-01	0.000	0.000
2.530-08	3.8000+00	3.2640+00	5.360-01	0.000	0.000	0.000	0.000	5.360-01	0.000	0.000
3.000-08	3.7500+00	3.2600+00	4.900-01	0.000	0.000	0.000	0.000	4.900-01	0.000	0.000
5.000-08	3.6400+00	3.2580+00	3.820-01	0.000	0.000	0.000	0.000	3.820-01	0.000	0.000
7.000-08	3.5900+00	3.2650+00	3.250-01	0.000	0.000	0.000	0.000	3.250-01	0.000	0.000
1.000-07	3.5300+00	3.2580+00	2.720-01	0.000	0.000	0.000	0.000	2.720-01	0.000	0.000
3.000-07	3.4100+00	3.2520+00	1.580-01	0.000	0.000	0.000	0.000	1.580-01	0.000	0.000
1.000-06	3.3300+00	3.2420+00	8.800-02	0.000	0.000	0.000	0.000	8.800-02	0.000	0.000
3.000-06	3.2600+00	3.2090+00	5.100-02	0.000	0.000	0.000	0.000	5.100-02	0.000	0.000
1.000-05	3.2000+00	3.1720+00	2.840-02	0.000	0.000	0.000	0.000	2.840-02	0.000	0.000
3.000-05	3.1800+00	3.1630+00	1.660-02	0.000	0.000	0.000	0.000	1.660-02	0.000	0.000
1.000-04	3.1500+00	3.1410+00	9.200-03	0.000	0.000	0.000	0.000	9.200-03	0.000	0.000
3.000-04	3.1200+00	3.1140+00	6.100-03	0.000	0.000	0.000	0.000	6.100-03	0.000	0.000
5.000-04	3.2400+00	3.2345+00	5.500-03	0.000	0.000	0.000	0.000	5.500-03	0.000	0.000
7.000-04	3.4600+00	3.4540+00	5.600-03	0.000	0.000	0.000	0.000	5.600-03	0.000	0.000
1.000-03	3.6700+00	3.6640+00	6.300-03	0.000	0.000	0.000	0.000	6.300-03	0.000	0.000
1.300-03	4.3200+00	4.3120+00	7.700-03	0.000	0.000	0.000	0.000	7.700-03	0.000	0.000
1.600-03	6.0500+00	6.0390+00	1.060-02	0.000	0.000	0.000	0.000	1.060-02	0.000	0.000
2.000-03	1.3800+01	1.3780+01	2.030-02	0.000	0.000	0.000	0.000	2.030-02	0.000	0.000
2.250-03	3.0000+01	2.9964+01	3.600-02	0.000	0.000	0.000	0.000	3.600-02	0.000	0.000
2.500-03	8.6000+01	8.5916+01	8.430-02	0.000	0.000	0.000	0.000	8.430-02	0.000	0.000
2.700-03	2.1700+02	2.1679+02	2.070-01	0.000	0.000	0.000	0.000	2.070-01	0.000	0.000
2.800-03	3.4000+02	3.3971+02	2.940-01	0.000	0.000	0.000	0.000	2.940-01	0.000	0.000
2.900-03	3.6500+02	3.6471+02	2.890-01	0.000	0.000	0.000	0.000	2.890-01	0.000	0.000
3.000-03	2.6000+02	2.5980+02	1.960-01	0.000	0.000	0.000	0.000	1.960-01	0.000	0.000
3.100-03	1.4000+02	1.3988+02	1.190-01	0.000	0.000	0.000	0.000	1.190-01	0.000	0.000
3.200-03	8.7000+01	8.6951+01	7.450-02	0.000	0.000	0.000	0.000	7.450-02	0.000	0.000
3.300-03	4.8000+01	4.7975+01	4.940-02	0.000	0.000	0.000	0.000	4.940-02	0.000	0.000
3.500-03	3.5200+01	3.5187+01	2.520-02	0.000	0.000	0.000	0.000	2.520-02	0.000	0.000
3.750-03	2.5000+01	2.4992+01	1.340-02	0.000	0.000	0.000	0.000	1.340-02	0.000	0.000
4.000-03	1.1300+01	1.1297+01	8.000-03	0.000	0.000	0.000	0.000	8.000-03	0.000	0.000
5.000-03	8.0000+00	7.9980+00	2.600-03	0.000	0.000	0.000	0.000	2.600-03	0.000	0.000
6.000-03	7.1000+00	7.0990+00	1.780-03	0.000	0.000	0.000	0.000	1.780-03	0.000	0.000
7.000-03	6.7000+00	6.6990+00	1.410-03	0.000	0.000	0.000	0.000	1.410-03	0.000	0.000
8.000-03	6.1000+00	6.0990+00	1.200-03	0.000	0.000	0.000	0.000	1.200-03	0.000	0.000
1.000-02	5.6700+00	5.6690+00	9.100-04	0.000	0.000	0.000	0.000	9.100-04	0.000	0.000
1.200-02	5.2600+00	5.2190+00	7.500-04	0.000	0.000	0.000	0.000	7.500-04	0.000	0.000
1.500-02	4.7500+00	4.7490+00	6.000-04	0.000	0.000	0.000	0.000	6.000-04	0.000	0.000
2.000-02	4.4200+00	4.4290+00	4.900-04	0.000	0.000	0.000	0.000	4.900-04	0.000	0.000
2.500-02	4.2200+00	4.2190+00	4.500-04	0.000	0.000	0.000	0.000	4.500-04	0.000	0.000
3.000-02	4.1600+00	4.1590+00	9.000-04	0.000	0.000	0.000	0.000	9.000-04	0.000	0.000
3.200-02	4.1000+00	4.0970+00	3.400-03	0.000	0.000	0.000	0.000	3.400-03	0.000	0.000
3.400-02	4.0400+00	4.0360+00	4.400-03	0.000	0.000	0.000	0.000	4.400-03	0.000	0.000
3.800-02	3.9700+00	3.9670+00	2.700-03	0.000	0.000	0.000	0.000	2.700-03	0.000	0.000
4.000-02	3.9200+00	3.9190+00	1.400-03	0.000	0.000	0.000	0.000	1.400-03	0.000	0.000
4.500-02	3.8300+00	3.8290+00	8.700-04	0.000	0.000	0.000	0.000	8.760-04	0.000	0.000
5.000-02	4.0000+00	3.9990+00	1.200-03	0.000	0.000	0.000	0.000	1.200-03	0.000	0.000
5.100-02	4.2200+00	4.2190+00	1.500-03	0.000	0.000	0.000	0.000	1.500-03	0.000	0.000

ENERGY (MEV)	TOTAL (BARNS)	ELASTIC (BARNS)	NON-EL (BARNS)	INELASTIC (BARNS)	N,2N (BARNS)	N,N ALPHA (BARNS)	N,n P (BARNS)	N,GAMMA (BARNS)	N,P (BARNS)	N,ALPHA (BARNS)
5.200-02	4.3000+00	4.2960+00	1.9000-03	0.000	0.000	0.000	0.000	1.900-03	0.000	0.000
5.300-02	4.7000+00	4.6980+00	2.2000-03	0.000	0.000	0.000	0.000	2.200-03	0.000	0.000
5.330-02	5.4000+00	5.3980+00	2.3000-03	0.000	0.000	0.000	0.000	2.300-03	0.000	0.000
5.340-02	7.6000+00	7.5980+00	2.350-03	0.000	0.000	0.000	0.000	2.350-03	0.000	0.000
5.350-02	1.0800+01	1.0798+01	2.4000-03	0.000	0.000	0.000	0.000	2.400-03	0.000	0.000
5.360-02	1.5600+01	1.5598+01	2.4000-03	0.000	0.000	0.000	0.000	2.450-03	0.000	0.000
5.370-02	2.2500+01	2.2497+01	2.5000-03	0.000	0.000	0.000	0.000	2.500-03	0.000	0.000
5.380-02	3.1400+01	3.1397+01	2.5500-03	0.000	0.000	0.000	0.000	2.550-03	0.000	0.000
5.390-02	4.1300+01	4.1297+01	2.6000-03	0.000	0.000	0.000	0.000	2.600-03	0.000	0.000
5.400-02	4.8800+01	4.8797+01	2.6000-03	0.000	0.000	0.000	0.000	2.600-03	0.000	0.000
5.410-02	5.0900+01	5.0897+01	2.6000-03	0.000	0.000	0.000	0.000	2.600-03	0.000	0.000
5.420-02	4.7600+01	4.7597+01	2.6000-03	0.000	0.000	0.000	0.000	2.600-03	0.000	0.000
5.430-02	4.2100+01	4.2097+01	2.6000-03	0.000	0.000	0.000	0.000	2.600-03	0.000	0.000
5.440-02	3.6100+01	3.6097+01	2.6000-03	0.000	0.000	0.000	0.000	2.600-03	0.000	0.000
5.450-02	3.0800+01	3.0797+01	2.6000-03	0.000	0.000	0.000	0.000	2.600-03	0.000	0.000
5.460-02	2.6500+01	2.6497+01	2.6000-03	0.000	0.000	0.000	0.000	2.600-03	0.000	0.000
5.470-02	2.3000+01	2.2997+01	2.6000-03	0.000	0.000	0.000	0.000	2.600-03	0.000	0.000
5.480-02	2.0300+01	2.0297+01	2.6000-03	0.000	0.000	0.000	0.000	2.600-03	0.000	0.000
5.490-02	1.8100+01	1.8097+01	2.6000-03	0.000	0.000	0.000	0.000	2.600-03	0.000	0.000
5.500-02	1.6500+01	1.6297+01	2.6000-03	0.000	0.000	0.000	0.000	2.600-03	0.000	0.000
5.510-02	1.4800+01	1.4797+01	2.6000-03	0.000	0.000	0.000	0.000	2.600-03	0.000	0.000
5.520-02	1.3600+01	1.3597+01	2.6000-03	0.000	0.000	0.000	0.001	2.600-03	0.000	0.000
5.540-02	1.3600+01	1.3597+01	2.6000-03	0.000	0.000	0.000	0.000	2.600-03	0.000	0.000
5.560-02	1.0400+01	1.0397+01	2.6000-03	0.000	0.000	0.000	0.000	2.600-03	0.000	0.000
5.600-02	8.6000+00	8.5970+00	2.6000-03	0.000	0.000	0.000	0.000	2.600-03	0.000	0.000
5.650-02	7.2000+00	7.1970+00	2.5500-03	0.000	0.000	0.000	0.000	2.550-03	0.000	0.000
5.700-02	6.1000+00	6.0970+00	2.5000-03	0.000	0.000	0.000	0.000	2.500-03	0.000	0.000
5.800-02	5.1000+00	5.0980+00	2.2000-03	0.000	0.000	0.000	0.000	2.200-03	0.000	0.000
5.900-02	4.8000+00	4.7980+00	1.7000-03	0.000	0.000	0.000	0.000	1.700-03	0.000	0.000
6.000-02	4.5800+00	4.5790+00	1.2000-03	0.000	0.000	0.000	0.000	1.200-03	0.000	0.000
6.500-02	4.1500+00	4.1490+00	4.6000-04	0.000	0.000	0.000	0.000	4.600-04	0.000	0.000
7.000-02	3.9000+00	3.9000+00	3.3000-04	0.000	0.000	0.000	0.000	3.300-04	0.000	0.000
7.500-02	3.7300+00	3.7300+00	2.7000-04	0.000	0.000	0.000	0.000	2.700-04	0.000	0.000
8.000-02	3.6200+00	3.6200+00	2.4000-04	0.000	0.000	0.000	0.000	2.400-04	0.000	0.000
9.000-02	3.5300+00	3.5300+00	2.2000-04	0.000	0.000	0.000	0.000	2.200-04	0.000	0.000
1.000-01	3.4200+00	3.4200+00	2.3000-04	0.000	0.000	0.000	0.000	2.300-04	0.000	0.000
1.100-01	3.3700+00	3.3700+00	7.2000-04	0.000	0.000	0.000	0.000	7.200-04	0.000	0.000
1.200-01	3.3400+00	3.3400+00	8.6000-04	0.000	0.000	0.000	0.000	8.600-04	0.000	0.000
1.500-01	3.2700+00	3.2700+00	9.0000-04	0.000	0.000	0.000	0.000	9.000-04	0.000	0.000
1.700-01	3.2600+00	3.2600+00	8.4000-04	0.000	0.000	0.000	0.000	8.400-04	0.000	0.000
1.900-01	3.4600+00	3.4600+00	7.7000-04	0.000	0.000	0.000	0.000	7.700-04	0.000	0.000
2.000-01	3.8700+00	3.8700+00	7.3000-04	0.000	0.000	0.000	0.000	7.300-04	0.000	0.000
2.040-01	4.3500+00	4.3500+00	7.2000-04	0.000	0.000	0.000	0.000	7.200-04	0.000	0.000
2.080-01	7.1000+00	7.1000+00	7.1000-04	0.000	0.000	0.000	0.000	7.100-04	0.000	0.000
2.100-01	7.0000+00	7.0000+00	7.1000-04	0.000	0.000	0.000	0.000	7.100-04	0.000	0.000
2.120-01	4.9000+00	4.9000+00	7.0000-04	0.000	0.000	0.000	0.000	7.000-04	0.000	0.000
2.140-01	4.7000+00	4.7000+00	6.9000-04	0.000	0.000	0.000	0.000	6.900-04	0.000	0.000
2.180-01	4.4500+00	4.4500+00	6.9000-04	0.000	0.000	0.000	0.000	6.900-04	0.000	0.000

ENERGY (MEV)	TOTAL (BARNS)	ELASTIC (BARNS)	NON-EL (BARNS)	INELASTIC (BARNS)	N,2N (BARNS)	N,N ALPHA (BARNS)	N,N P (BARNS)	N,GAMMA (BARNS)	N,P (BARNS)	N,ALPHA (BARNS)
2.200-01	4.8000+00	4.8000+00	6.8000-04	0.000	0.000	0.000	0.000	6.800-04	0.000	0.000
2.220-01	4.5500+00	4.5500+00	6.8000-04	0.000	0.000	0.000	0.000	6.800-04	0.000	0.000
2.240-01	4.1000+00	4.1000+00	6.7000-04	0.000	0.000	0.000	0.000	6.700-04	0.000	0.000
2.280-01	3.6000+00	3.6000+00	6.6000-04	0.000	0.000	0.000	0.000	6.600-04	0.000	0.000
2.340-01	3.8000+00	3.8000+00	6.4000-04	0.000	0.000	0.000	0.000	6.400-04	0.000	0.000
2.380-01	5.0000+00	5.0000+00	6.3000-04	0.000	0.000	0.000	0.000	6.300-04	0.000	0.000
2.400-01	7.5000+00	7.5000+00	6.1000-04	0.000	0.000	0.000	0.000	6.100-04	0.000	0.000
2.420-01	8.2000+00	8.2000+00	6.1000-04	0.000	0.000	0.000	0.030	6.100-04	0.000	0.000
2.440-01	7.8000+00	7.8000+00	6.1000-04	0.000	0.000	0.000	0.000	6.100-04	0.000	0.000
2.460-01	6.6000+00	6.6000+00	6.0000-04	0.000	0.000	0.000	0.000	6.000-04	0.000	0.000
2.480-01	5.6000+00	5.6000+00	5.9000-04	0.000	0.000	0.000	0.000	5.900-04	0.000	0.000
2.500-01	4.0000+00	4.0000+00	5.9000-04	0.000	0.000	0.000	0.000	5.900-04	0.000	0.000
2.550-01	3.5500+00	3.5500+00	5.7000-04	0.000	0.000	0.000	0.000	5.700-04	0.000	0.000
2.600-01	3.3000+00	3.3000+00	5.6000-04	0.000	0.000	0.000	0.000	5.600-04	0.000	0.000
2.700-01	3.0500+00	3.0500+00	5.4000-04	0.000	0.000	0.000	0.000	5.400-04	0.000	0.000
2.800-01	2.8300+00	2.8300+00	5.2000-04	0.000	0.000	0.000	0.000	5.200-04	0.000	0.000
2.900-01	2.5000+00	2.5000+00	4.9000-04	0.000	0.000	0.000	0.000	4.900-04	0.000	0.000
2.950-01	2.3000+00	2.3000+00	4.8000-04	0.000	0.000	0.000	0.000	4.800-04	0.000	0.000
3.000-01	2.7000+00	2.7000+00	4.7000-04	0.000	0.000	0.000	0.000	4.700-04	0.000	0.000
3.020-01	4.1000+00	4.1000+00	4.7000-04	0.000	0.000	0.000	0.000	4.700-04	0.000	0.000
3.040-01	4.7000+00	4.7000+00	4.6000-04	0.000	0.000	0.000	0.000	4.600-04	0.000	0.000
3.060-01	4.6000+00	4.6000+00	4.6000-04	0.000	0.000	0.000	0.000	4.600-04	0.000	0.000
3.080-01	4.3000+00	4.3000+00	4.5000-04	0.000	0.000	0.000	0.000	4.500-04	0.000	0.000
3.100-01	4.1000+00	4.1000+00	4.5000-04	0.000	0.000	0.000	0.000	4.500-04	0.000	0.000
3.120-01	3.6000+00	3.6000+00	4.5000-04	0.000	0.000	0.000	0.000	4.500-04	0.000	0.000
3.140-01	3.1500+00	3.1500+00	4.3000-04	0.000	0.000	0.000	0.000	4.300-04	0.000	0.000
3.200-01	3.2000+00	3.2000+00	4.3000-04	0.000	0.000	0.000	0.000	4.300-04	0.000	0.000
3.400-01	3.1500+00	3.1500+00	3.9000-04	0.000	0.000	0.000	0.000	3.900-04	0.000	0.000
3.600-01	3.4000+00	3.4000+00	3.6000-04	0.000	0.000	0.000	0.000	3.600-04	0.000	0.000
3.800-01	3.8000+00	3.8000+00	3.2000-04	0.000	0.000	0.000	0.000	3.200-04	0.000	0.000
3.840-01	4.3000+00	4.3000+00	3.1000-04	0.000	0.000	0.000	0.000	3.100-04	0.000	0.000
3.880-01	4.8500+00	4.8500+00	3.0000-04	0.000	0.000	0.000	0.000	3.000-04	0.000	0.000
3.920-01	4.9000+00	4.9000+00	2.9000-04	0.000	0.000	0.000	0.000	2.900-04	0.000	0.000
3.960-01	4.6000+00	4.6000+00	2.9000-04	0.000	0.000	0.000	0.000	2.900-04	0.000	0.000
4.000-01	3.8000+00	3.8000+00	2.8000-04	0.000	0.000	0.000	0.000	2.800-04	0.000	0.000
4.100-01	3.2500+00	3.2500+00	2.7000-04	0.000	0.000	0.000	0.000	2.700-04	0.000	0.000
4.200-01	3.3500+00	3.3500+00	2.6000-04	0.000	0.000	0.000	0.000	2.600-04	0.000	0.000
4.300-01	3.5000+00	3.5000+00	2.5000-04	0.000	0.000	0.000	0.000	2.500-04	0.000	0.000
4.400-01	3.2000+00	3.2000+00	2.4000-04	0.000	0.000	0.000	0.000	2.400-04	0.000	0.000
4.440-01	4.2000+00	4.2000+00	2.4000-04	0.000	0.000	0.000	0.000	2.400-04	0.000	0.000
4.480-01	5.0000+00	5.0000+00	2.4000-04	0.000	0.000	0.000	0.000	2.400-04	0.000	0.000
4.500-01	5.1500+00	5.1500+00	2.4000-04	0.000	0.000	0.000	0.000	2.400-04	0.000	0.000
4.540-01	4.8000+00	4.8000+00	2.4000-04	0.000	0.000	0.000	0.000	2.400-04	0.000	0.000
4.600-01	5.5000+00	4.4950+00	5.2000-03	5.000-03	0.000	0.000	0.000	2.400-04	0.000	0.000
4.700-01	3.0000+00	2.9900+00	1.0300-02	1.000-02	0.000	0.000	0.000	2.500-04	0.000	0.000
4.800-01	2.6200+00	2.6000+00	2.0300-02	2.000-02	0.000	0.000	0.000	2.600-04	0.000	0.000
5.070-01	2.3000+00	2.2650+00	3.5300-02	3.500-02	0.000	0.000	0.000	2.800-04	0.000	0.000
5.200-01	2.0000+00	1.9500+00	5.0300-02	5.000-02	0.000	0.000	0.000	3.000-04	0.000	0.000
5.300-01	2.0800+00	2.0200+00	6.0300-02	6.000-02	0.000	0.000	0.000	3.100-04	0.000	0.000
5.400-01	2.3000+00	2.2300+00	7.0300-02	7.000-02	0.000	0.000	0.000	3.200-04	0.000	0.000

ENERGY (MEV)	TOTAL (BARNS)	ELASTIC (BARNS)	NON-EL (BARNS)	INELASTIC (BARNS)	N,2N (BARNS)	N,N ALPHA (BARNS)	N,N P (BARNS)	N,GAMMA (BARNS)	N,P (BARNS)	N,ALPHA (BARNS)
5.450-01	3.6800+00	3.6100+00	7.0300-02	7.000-02	0.000	0.000	0.000	3.200-04	0.000	0.000
5.600-01	3.9000+00	3.8200+00	8.0300-02	8.000-02	0.000	0.000	0.000	3.300-04	0.000	0.000
5.800-01	3.9800+00	3.8800+00	1.0030-01	1.000-01	0.000	0.000	0.000	3.400-04	0.000	0.000
5.900-01	4.2500+00	4.1200+00	1.1030-01	1.100-01	0.000	0.000	0.000	3.400-04	0.000	0.000
6.000-01	5.0500+00	4.9350+00	1.1540-01	1.150-01	0.000	0.000	0.000	3.500-04	0.003	0.000
6.100-01	4.6500+00	4.5350+00	1.2040-01	1.200-01	0.000	0.000	0.000	3.500-04	0.000	0.000
6.200-01	4.2500+00	4.1150+00	1.3540-01	1.350-01	0.000	0.000	0.000	3.500-04	0.000	0.000
6.300-01	4.2200+00	4.0750+00	1.4540-01	1.450-01	0.000	0.000	0.000	3.500-04	0.000	0.000
6.400-01	4.4500+00	4.2950+00	1.5540-01	1.550-01	0.000	0.000	0.000	3.500-04	0.000	0.000
6.600-01	5.2500+00	5.0850+00	1.6540-01	1.650-01	0.000	0.000	0.000	3.500-04	0.000	0.000
6.800-01	6.5500+00	6.3700+00	1.8040-01	1.800-01	0.000	0.000	0.000	3.500-04	0.000	0.000
7.000-01	8.1500+00	7.9400+00	2.1030-01	2.100-01	0.000	0.000	0.000	3.400-04	0.000	0.000
7.100-01	8.5000+00	8.2850+00	2.1530-01	2.150-01	0.000	0.000	0.000	3.300-04	0.000	0.000
7.200-01	8.1500+00	7.9300+00	2.2030-01	2.200-01	0.000	0.000	0.000	3.300-04	0.000	0.000
7.300-01	7.1000+00	6.8700+00	2.3030-01	2.300-01	0.000	0.000	0.000	3.200-04	0.000	0.000
7.400-01	5.9000+00	5.6600+00	2.4030-01	2.400-01	0.000	0.000	0.000	3.200-04	0.000	0.000
7.500-01	5.0500+00	4.8050+00	2.4530-01	2.450-01	0.000	0.000	0.000	3.100-04	0.000	0.000
7.600-01	4.6000+00	4.3500+00	2.5030-01	2.500-01	0.000	0.000	0.000	3.100-04	0.000	0.000
7.700-01	5.8000+00	5.5450+00	2.5530-01	2.550-01	0.000	0.100	0.000	3.000-04	0.000	0.000
7.830-01	6.9000+00	6.5400+00	2.6030-01	2.600-01	0.000	0.000	0.000	2.900-04	0.000	0.000
7.900-01	6.6000+00	6.3300+00	2.7030-01	2.700-01	0.000	0.000	0.000	2.900-04	0.000	0.000
8.000-01	5.8000+00	5.5250+00	2.7530-01	2.750-01	0.000	0.000	0.000	2.800-04	0.000	0.000
8.100-01	5.1500+00	4.8700+00	2.8030-01	2.800-01	0.000	0.000	0.000	2.700-04	0.000	0.000
8.200-01	4.7500+00	4.4600+00	2.9030-01	2.900-01	0.000	0.000	0.000	2.600-04	0.000	0.000
8.400-01	4.2000+00	3.9000+00	3.0030-01	3.000-01	0.000	0.000	0.000	2.500-04	0.000	0.000
8.600-01	3.7000+00	3.3800+00	3.2020-01	3.200-01	0.000	0.000	0.000	2.400-04	0.000	0.000
8.800-01	3.9500+00	3.6000+00	3.5020-01	3.500-01	0.000	0.000	0.000	2.300-04	0.000	0.000
8.900-01	4.4700+00	4.1150+00	3.5520-01	3.550-01	0.000	0.000	0.000	2.300-04	0.000	0.000
9.000-01	4.7500+00	4.3900+00	3.6020-01	3.600-01	0.000	0.000	0.000	2.200-04	0.000	0.000
9.100-01	5.9000+00	5.5350+00	3.6520-01	3.650-01	0.000	0.000	0.000	2.100-04	0.000	0.000
9.200-01	5.4000+00	5.0300+00	3.7020-01	3.700-01	0.000	0.000	0.000	2.100-04	0.000	0.000
9.300-01	4.4000+00	4.0200+00	3.8020-01	3.800-01	0.000	0.000	0.000	2.000-04	0.000	0.000
9.400-01	3.7500+00	3.3600+00	3.9020-01	3.900-01	0.000	0.000	0.000	2.000-04	0.000	0.000
9.500-01	3.5000+00	3.1000+00	4.0020-01	4.000-01	0.000	0.000	0.000	2.000-04	0.000	0.000
9.600-01	3.4300+00	3.0250+00	4.0520-01	4.050-01	0.000	0.000	0.000	1.900-04	0.000	0.000
9.700-01	3.5000+00	3.0900+00	4.1020-01	4.100-01	0.000	0.000	0.000	1.900-04	0.000	0.000
9.800-01	3.8500+00	3.4300+00	4.2020-01	4.200-01	0.000	0.000	0.000	1.800-04	0.000	0.000
9.850-01	4.0500+00	3.6250+00	4.2520-01	4.250-01	0.000	0.000	0.000	1.800-04	0.000	0.000
1.000+00	3.5000+00	3.0450+00	4.5520-01	4.550-01	0.000	0.000	0.000	1.800-04	0.000	0.000
1.020+00	3.6000+00	3.1150+00	4.8520-01	4.850-01	0.000	0.000	0.000	1.700-04	0.000	0.000
1.040+00	4.1800+00	3.6650+00	5.1520-01	5.150-01	0.000	0.000	0.000	1.700-04	0.000	0.000
1.060+00	4.5200+00	3.9700+00	5.5020-01	5.500-01	0.000	0.000	0.000	1.600-04	0.000	0.000
1.080+00	4.6700+00	4.0500+00	6.2020-01	6.200-01	0.000	0.000	0.000	1.600-04	0.000	0.000
1.100+00	4.4100+00	3.7600+00	6.5020-01	6.500-01	0.000	0.000	0.000	1.600-04	0.000	0.000
1.130+00	3.9350+00	3.3100+00	6.7010-01	6.700-01	0.000	0.000	0.000	1.500-04	0.000	0.000
1.160+00	3.7200+00	3.0450+00	6.7510-01	6.750-01	0.000	0.000	0.000	1.400-04	0.000	0.000
1.190+00	3.8000+00	3.1300+00	6.7010-01	6.700-01	0.000	0.000	0.000	1.400-04	0.000	0.000
1.200+00	3.4500+00	2.7850+00	6.6510-01	6.650-01	0.000	0.000	0.000	1.300-04	0.000	0.000
1.210+00	3.4500+00	2.7900+00	6.6010-02	6.600-01	0.000	0.000	0.000	1.300-04	0.000	0.000
1.230+00	4.1000+00	3.4700+00	6.3010-01	6.300-01	0.000	0.000	0.000	1.300-04	0.000	0.000

ENERGY (MEV)	TOTAL (BARNS)	ELASTIC (BARNS)	NON-EL (BARNS)	INELASTIC (BARNS)	N,2N (BARNS)	N,N ALPHA (BARNS)	N,N P (BARNS)	N,GAMMA (BARNS)	N,P (BARNS)	N,ALPHA (BARNS)
1.240+00	3.9700+00	3.3700+00	6.0010-01	6.000-01	0.000	0.000	0.000	1.300-04	0.000	0.000
1.260+00	3.2500+00	2.7750+00	4.7510-01	4.750-01	0.000	0.000	0.000	1.200-04	0.000	0.000
1.280+00	3.0000+00	2.5600+00	4.4010-01	4.400-01	0.000	0.000	0.000	1.200-04	0.000	0.000
1.300+00	3.1000+00	2.6800+00	4.2010-01	4.200-01	0.000	0.000	0.000	1.200-04	0.000	0.000
1.320+00	4.0200+00	3.6150+00	4.0510-01	4.050-01	0.000	0.000	0.000	1.200-04	0.000	0.000
1.325+00	4.2000+00	3.8000+00	4.0010-01	4.000-01	0.000	0.000	0.000	1.200-04	0.000	0.000
1.340+00	3.4000+00	3.0200+00	3.8010-01	3.800-01	0.000	0.000	0.000	1.100-04	0.000	0.000
1.360+00	2.8500+00	2.4900+00	3.6010-01	3.600-01	0.000	0.000	0.000	1.100-04	0.000	0.000
1.400+00	2.9800+00	2.6550+00	3.2510-01	3.250-01	0.000	0.000	0.000	1.000-04	0.000	0.000
1.440+00	2.7700+00	2.4650+00	3.0510-01	3.050-01	0.000	0.000	0.000	1.000-04	0.000	0.000
1.460+00	2.8300+00	2.5200+00	3.1010-01	3.100-01	0.000	0.000	0.000	1.000-04	0.000	0.000
1.480+00	2.7000+00	2.3700+00	3.3010-01	3.300-01	0.000	0.000	0.000	1.000-04	0.000	0.000
1.520+00	2.6000+00	2.2350+00	3.6510-01	3.650-01	0.000	0.000	0.000	9.000-05	0.000	0.000
1.560+00	2.5400+00	2.1400+00	4.0010-01	4.000-01	0.000	0.000	0.000	9.000-05	0.000	0.000
1.580+00	2.6500+00	2.2090+00	4.5010-01	4.500-01	0.000	0.000	0.000	9.000-05	0.000	0.000
1.600+00	3.1500+00	2.6850+00	4.6510-01	4.650-01	0.000	0.000	0.000	9.000-05	0.000	0.000
1.620+00	4.1500+00	3.6600+00	4.9010-01	4.900-01	0.000	0.000	0.000	9.000-05	0.000	0.000
1.625+00	4.5000+00	4.0050+00	4.9510-01	4.950-01	0.000	0.000	0.000	9.000-05	0.000	0.000
1.640+00	3.1700+00	2.6550+00	5.1510-01	5.150-01	0.000	0.000	0.000	9.000-05	0.000	0.000
1.680+00	2.5000+00	1.9450+00	5.5510-01	5.550-01	0.000	0.000	0.000	9.000-05	0.000	0.000
1.690+00	2.4000+00	1.8300+00	5.7010-01	5.700-01	0.000	0.000	0.000	9.000-05	0.000	0.000
1.700+00	2.7800+00	2.2050+00	5.7510-01	5.750-01	0.000	0.000	0.000	8.000-05	0.000	0.000
1.720+00	3.1500+00	2.5650+00	5.8510-01	5.850-01	0.000	0.000	0.000	8.000-05	0.000	0.000
1.740+00	3.3300+00	2.7250+00	6.0510-01	6.050-01	0.000	0.000	0.000	8.000-05	0.000	0.000
1.760+00	3.1700+00	2.5500+00	6.2010-01	6.200-01	0.000	0.000	0.000	8.000-05	0.000	0.000
1.780+00	3.0000+00	2.3600+00	6.4010-01	6.400-01	0.000	0.000	0.000	8.000-05	0.000	0.000
1.800+00	3.1400+00	2.4950+00	6.4510-01	6.450-01	0.000	0.000	0.000	8.000-05	0.000	0.000
1.820+00	3.1000+00	2.4550+00	6.4510-01	6.450-01	0.000	0.000	0.000	8.000-05	0.000	0.000
1.860+00	2.5600+00	1.9100+00	6.5010-01	6.500-01	0.000	0.000	0.000	8.000-05	0.000	0.000
1.880+00	2.1500+00	1.4950+00	6.5510-01	6.550-01	0.000	0.000	0.000	8.000-05	0.000	0.000
1.900+00	2.2000+00	1.5450+00	6.5510-01	6.550-01	0.000	0.000	0.000	7.000-05	0.000	0.000
1.940+00	2.7300+00	2.0750+00	6.5510-01	6.550-01	0.000	0.000	0.000	7.000-05	0.000	0.000
1.960+00	3.0400+00	2.3450+00	6.5510-01	6.550-01	0.000	0.000	0.000	7.000-05	0.000	0.000
1.980+00	2.9000+00	2.2450+00	6.5510-01	6.550-01	0.000	0.000	0.000	7.000-05	0.000	0.000
2.020+00	3.0100+00	2.3600+00	6.5010-01	6.500-01	0.000	0.000	0.000	7.000-05	0.000	0.000
2.050+00	3.2600+00	2.6300+00	6.3010-01	6.300-01	0.000	0.000	0.000	7.000-05	0.000	0.000
2.100+00	3.3700+00	2.7650+00	6.0510-01	6.050-01	0.000	0.000	0.000	7.000-05	0.000	0.000
2.140+00	3.0200+00	2.4350+00	5.8510-01	5.850-01	0.000	0.000	0.000	7.000-05	0.000	0.000
2.200+00	3.0200+00	2.4500+00	5.7010-01	5.700-01	0.000	0.000	0.000	6.000-05	0.000	0.000
2.250+00	2.9200+00	2.3450+00	5.7510-01	5.750-01	0.000	0.000	0.000	6.000-05	0.000	0.000
2.300+00	2.9000+00	2.3200+00	5.8010-01	5.800-01	0.000	0.000	0.000	6.000-05	0.000	0.000
2.350+00	2.8500+00	2.2650+00	5.8510-01	5.850-01	0.000	0.000	0.000	6.000-05	0.000	0.000
2.400+00	3.1300+00	2.5400+00	5.9010-01	5.900-01	0.000	0.000	0.000	6.000-05	0.000	0.000
2.450+00	3.0500+00	2.4550+00	5.9510-01	5.950-01	0.000	0.000	0.000	6.000-05	0.000	0.000
2.500+00	2.9800+00	2.5800+00	6.0010-01	6.000-01	0.000	0.000	0.000	6.000-05	0.000	0.000
2.550+00	3.0600+00	2.4550+00	6.0510-01	6.050-01	0.000	0.000	0.000	6.000-05	0.000	0.000
2.600+00	2.7000+00	2.0900+00	6.1010-01	6.100-01	0.000	0.000	0.000	6.000-05	0.000	0.000
2.700+00	2.6400+00	2.0150+00	6.2510-01	6.250-01	0.000	0.000	0.000	6.000-05	0.000	0.000
2.800+00	2.6200+00	1.9800+00	6.4010-01	6.400-01	0.000	0.000	0.000	5.000-05	0.000	0.000
2.900+00	2.5500+00	1.9000+00	6.5010-01	6.500-01	0.000	0.000	0.000	5.000-05	0.000	0.000

ENERGY (MEV)	TOTAL (BARNS)	ELASTIC (BARNS)	NON-EL (BARNS)	INELASTIC (BARNS)	N,2N (BARNS)	N,N ALPHA (BARNS)	N,N P (BARNS)	N,GAMMA (BARNS)	N,P (BARNS)	N,ALPHA (BARNS)

ENERGY (MEV)	TOTAL (BARNS)	ELASTIC (BARNS)	NON-EL (BARNS)	INELASTIC (BARNS)	N,2N (BARNS)	N,N ALPHA (BARNS)	N,N P (BARNS)	N,GAMMA (BARNS)	N,P (BARNS)	N,ALPHA (BARNS)
6.700+00	1.6900+00	7.9900-01	8.9200-01	8.670-01	0.000	0.000	0.000	2.000-05	2.040-02	5.000-03
6.750+00	1.6800+00	7.8500-01	8.9500-01	8.680-01	0.000	0.000	0.000	2.000-05	2.110-02	6.000-03
6.800+00	1.6700+00	7.7400-01	8.9600-01	8.680-01	0.000	0.000	0.000	2.000-05	2.190-02	6.000-03
6.850+00	1.6600+00	7.6300-01	8.9700-01	8.680-01	0.000	0.000	0.000	2.000-05	2.280-02	6.000-03
6.900+00	1.6600+00	7.6100-01	9.0400-01	8.680-01	0.000	0.000	0.000	2.000-05	2.400-02	7.000-03
6.950+00	1.6500+00	7.4400-01	7.1300-01	8.680-01	0.000	0.000	0.000	2.000-05	2.680-02	7.000-03
7.000+00	1.6500+00	7.3700-01	7.1000-01	8.680-01	0.000	0.000	0.000	2.000-05	3.750-02	7.000-03
7.050+00	1.6500+00	7.4000-01	9.0200-01	8.680-01	0.000	0.000	0.000	2.000-05	3.420-02	8.000-03
7.100+00	1.6500+00	7.4500-01	9.0300-01	8.680-01	0.000	0.000	0.000	2.000-05	2.930-02	8.000-03
7.150+00	1.6500+00	7.4800-01	9.0200-01	8.690-01	0.000	0.000	0.000	2.000-05	2.640-02	9.000-03
7.180+00	1.6500+00	7.5900-01	9.1700-01	8.680-01	0.000	0.000	0.000	2.000-05	2.340-02	9.000-03
7.200+00	1.6500+00	7.4700-01	9.2100-01	8.690-01	0.000	0.000	0.000	2.000-05	2.480-02	1.000-02
7.220+00	1.6500+00	7.3500-01	9.1600-01	8.690-01	0.000	0.000	0.000	2.000-05	4.200-02	1.000-02
7.250+00	1.6500+00	7.3400-01	9.1700-01	8.700-01	0.000	0.000	0.000	2.000-05	3.680-02	1.030-02
7.280+00	1.6500+00	7.3400-01	9.2000-01	8.700-01	0.000	0.000	0.000	2.000-05	3.810-02	1.100-02
7.310+00	1.6500+00	7.3300-01	9.1700-01	8.700-01	0.000	0.000	0.000	2.000-05	3.880-02	1.200-02
7.360+00	1.6500+00	7.3000-01	9.2000-01	8.710-01	0.000	0.000	0.000	2.000-05	3.750-02	1.400-02
7.380+00	1.6400+00	7.4000-01	9.2100-01	8.720-01	0.000	0.000	0.000	2.000-05	3.120-02	1.500-02
7.400+00	1.6400+00	7.3300-01	9.3200-01	8.720-01	0.000	0.000	0.000	2.000-05	3.280-02	1.600-02
7.450+00	1.6400+00	7.2900-01	9.3400-01	8.730-01	0.000	0.000	0.000	2.000-05	3.600-02	1.600-02
7.500+00	1.6500+00	7.2500-01	9.3200-01	8.730-01	0.000	0.000	0.000	2.000-05	3.690-02	1.900-02
7.550+00	1.6500+00	7.2100-01	9.2300-01	8.730-01	0.000	0.000	0.000	2.000-05	3.850-02	2.000-02
7.600+00	1.6500+00	7.0900-01	9.3100-01	8.740-01	0.000	0.000	0.000	2.000-05	4.020-02	2.100-02
7.650+00	1.6400+00	7.0600-01	9.3000-01	8.740-01	0.000	0.000	0.000	2.000-05	4.100-02	2.100-02
7.700+00	1.6400+00	7.0600-01	9.3200-01	8.770-01	0.000	0.000	0.000	2.000-05	3.750-02	2.200-02
7.750+00	1.6300+00	7.0200-01	9.4400-01	8.920-01	0.000	0.000	0.000	2.000-05	3.390-02	2.200-02
7.780+00	1.6300+00	6.9900-01	9.5700-01	8.930-01	0.000	0.000	0.000	2.000-05	2.840-02	2.300-02
7.800+00	1.6300+00	6.9400-01	9.6800-01	8.960-01	0.000	0.000	0.000	2.000-05	3.550-02	2.400-02
7.810+00	1.6300+00	6.9000-01	9.7300-01	8.960-01	0.000	0.000	0.000	2.000-05	4.000-02	2.500-02
7.840+00	1.6200+00	6.8800-01	9.6000-01	9.020-01	0.000	0.000	0.000	2.000-05	3.650-02	2.700-02
7.880+00	1.6200+00	6.8500-01	9.7300-01	9.010-01	0.000	0.000	0.000	2.000-05	3.220-02	3.000-02
7.900+00	1.6200+00	6.6300-01	9.6100-01	8.970-01	0.000	0.000	0.000	2.000-05	3.050-02	3.200-02
7.940+00	1.6300+00	6.5200-01	9.0300-01	8.760-01	0.000	0.000	0.000	2.000-05	3.000-02	3.300-02
8.000+00	1.6200+00	6.5300-01	9.9000-01	8.820-01	0.000	0.000	0.000	2.000-05	3.150-02	3.400-02
8.250+00	1.6300+00	6.7400-01	9.6900-01	7.420-01	0.000	0.000	0.000	2.000-05	3.540-02	3.500-02
8.500+00	1.6200+00	5.7400-01	9.5700-01	8.700-01	0.000	0.000	0.000	2.000-05	4.300-02	3.600-02
8.650+00	1.5900+00	6.0700-01	9.6800-01	9.030-01	0.000	0.000	1.000-20	2.000-05	5.850-02	3.700-02
8.750+00	1.5700+00	6.2900-01	9.7300-01	9.010-01	0.000	0.000	1.000-03	2.000-05	6.660-02	4.000-02
8.900+00	1.5800+00	6.2700-01	9.6000-01	9.040-01	0.000	0.000	1.000-03	2.000-05	4.620-02	4.200-02
9.000+00	1.6100+00	6.2500-01	9.7300-01	9.010-01	0.000	0.000	1.000-03	2.000-05	4.250-02	4.500-02
9.050+00	1.6100+00	6.0100-01	9.0100-01	9.040-01	0.000	0.000	2.000-03	2.000-05	3.900-02	4.700-02
9.150+00	1.5900+00	6.2700-01	9.8700-01	9.040-01	0.000	0.000	2.000-03	2.000-05	4.200-02	4.900-02
9.250+00	1.5900+00	6.2500-01	9.0300-01	9.010-01	0.000	0.000	2.000-03	2.000-05	4.750-02	5.000-02
9.350+00	1.5900+00	6.2500-01	9.8700-01	8.970-01	0.000	0.000	2.000-03	2.000-05	6.750-02	
9.500+00	1.5800+00	6.0100-01	9.0900-01	8.760-01	0.000	0.000		2.000-05	9.000-02	
9.600+00	1.5900+00	6.9900-01	9.1000-01	8.820-01	0.000	0.000		2.000-05	2.000-01	
9.700+00	1.5900+00	6.9800-01	9.2000-01	7.420-01	0.000	0.000		1.000-05	7.100-02	
9.750+00	1.5900+00	5.9900-01	9.2000-01	8.700-01	0.000	0.000		1.000-05	5.000-02	
9.800+00	1.5900+00	5.9500-01	9.5000-01	8.950-01	0.000	0.000		1.000-05		

ENERGY (MEV)	TOTAL (BARNS)	ELASTIC (BARNS)	NON-EL (BARNS)	INELASTIC (BARNS)	N,2N (BARNS)	N,N ALPHA (BARNS)	N,N P (BARNS)	N,GAMMA (BARNS)	N,P (BARNS)	N,ALPHA (BARNS)
9.950+00	1.6000+00	6.0300-01	9.9700-01	8.835-01	0.000	0.000	3.000-03	1.000-05	5.750-02	5.300-02
1.005+01	1.6100+00	6.1200-01	9.9800-01	8.390-01	0.000	0.000	4.000-03	1.000-05	1.000-01	5.500-02
1.010+01	1.6200+00	6.2100-01	9.9900-01	7.270-01	0.000	0.000	5.000-03	1.000-05	2.100-01	5.700-02
1.020+01	1.6300+00	6.3000-01	1.0000+00	7.740-01	0.000	0.000	6.000-03	1.000-05	1.600-01	6.000-02
1.030+01	1.6400+00	6.3900-01	1.0010+00	8.360-01	0.000	0.000	7.000-03	1.000-05	9.600-02	6.300-02
1.035+01	1.6500+00	6.4900-01	1.0020+00	8.360-01	0.000	0.000	8.000-03	1.000-05	6.000-02	6.400-02
1.050+01	1.6700+00	6.6800-01	1.0040+00	8.270-01	0.000	0.000	1.000-02	1.000-05	8.450-02	6.800-02
1.075+01	1.6600+00	6.5600-01	1.0060+00	8.170-01	0.000	1.000-20	1.400-02	1.000-05	9.200-02	7.500-02
1.100+01	1.6500+00	6.4400-01	1.0070+00	8.040-01	0.000	1.000-03	1.600-02	1.000-05	9.300-02	8.200-02
1.125+01	1.6500+00	6.4300-01	1.0060+00	7.990-01	0.000	2.000-03	1.900-02	1.000-05	9.200-02	9.000-02
1.150+01	1.6600+00	6.4200-01	1.0090+00	7.930-01	1.000-20	2.000-03	2.300-02	1.000-05	9.100-02	9.700-02
1.175+01	1.6400+00	6.5100-01	1.0100+00	7.070-01	6.000-03	3.000-03	2.600-02	1.000-05	8.800-02	1.030-01
1.200+01	1.6200+00	6.3000-01	1.0110+00	7.730-01	3.100-02	5.000-03	3.300-02	1.000-05	8.370-02	1.100-01
1.250+01	1.6900+00	6.0900-01	1.0120+00	7.520-01	4.600-02	7.000-03	4.600-02	1.000-05	7.320-02	1.270-01
1.300+01	1.7100+00	6.7800-01	1.0110+00	7.220-01	6.400-02	9.000-03	5.800-02	1.000-05	6.060-02	1.460-01
1.350+01	1.6800+00	6.7100-01	1.0090+00	6.920-01	8.000-02	1.300-02	7.200-02	1.000-05	5.130-02	1.650-01
1.400+01	1.7300+00	7.2600-01	1.0040+00	6.560-01	9.400-02	1.600-02	9.000-02	1.000-05	4.520-02	1.740-01
1.450+01	1.7700+00	7.4100-01	9.9900-01	6.280-01	1.060-01	2.000-02	1.080-01	1.000-05	3.750-02	1.740-01
1.500+01	1.7900+00	7.7700-01	9.9300-01	6.100-01	1.170-01	2.200-02	1.270-01	1.000-05	3.400-02	1.380-01
1.550+01	1.8100+00	8.0300-01	9.8700-01	5.960-01	1.270-01	2.500-02	1.450-01	1.000-05	3.100-02	1.130-01
1.600+01	1.8500+00	8.3100-01	9.7900-01	5.790-01	1.350-01	2.900-02	1.620-01	1.000-05	2.470-02	9.100-02
1.650+01	1.8700+00	8.5700-01	9.7300-01	5.360-01	1.420-01	3.100-02	1.830-01	1.000-05	2.200-02	7.400-02
1.700+01	1.8900+00	8.8400-01	9.6600-01	5.270-01	1.490-01	3.400-02	2.030-01	1.000-05	1.950-02	6.600-02
1.750+01	1.9100+00	9.1200-01	9.5800-01	4.980-01	1.560-01	3.700-02	2.190-01	1.000-05	1.700-02	6.000-02
1.800+01	1.9400+00	9.4200-01	9.4600-01	4.720-01		4.000-02	2.320-01	1.000-05	1.400-02	6.500-02
1.850+01	1.9700+00	1.0120+00	9.3800-01	4.510-01		4.400-02	2.420-01	1.000-05	1.150-02	4.900-02
1.900+01		1.0520+00	9.2800-01	4.290-01		4.700-02	2.510-01	1.000-05	9.200-03	4.300-02
2.000+01			9.1800-01	4.080-01			2.580-01			3.800-02

INELASTIC LEVEL EXCITATION CROSS SECTIONS (BARNS)

Q VALUE (MEV)

ENERGY (MEV)	-.4392	-2.0800	-2.3910	-2.6400	-2.7050	-2.9840	-3.6780	-3.8500	-3.9150	-4.4310
.458	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
.500	2.0000-02	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
.550	5.7000-02	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
.600	1.3000-01	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
.650	2.0000-01	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
.700	2.5000-01	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
.750	2.8800-01	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
.800	3.1800-01	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
.850	3.4500-01	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
.900	3.6500-01	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
.950	3.8500-01	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.000	4.2300-01	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.050	5.3000-01	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.100	6.3700-01	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.150	6.6400-01	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.200	6.7000-01	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.250	6.5000-01	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.300	4.3000-01	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.350	3.6800-01	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.400	3.0700-01	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.450	2.9600-01	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.500	3.6800-01	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.550	4.2300-01	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.600	4.7000-01	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.650	5.2000-01	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.700	5.8000-01	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.750	6.2200-01	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.800	6.4500-01	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.850	6.5400-01	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.900	6.5200-01	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.950	6.4700-01	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.000	6.5200-01	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.050	6.8700-01	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.100	6.9600-01	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.150	6.8600-01	1.9000-02	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.200	6.5400-01	4.0000-02	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.250	6.2700-01	4.5000-02	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.300	5.9400-01	4.9000-02	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.350	5.9400-01	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.400	5.6400-01	5.3000-02	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

INELASTIC LEVEL EXCITATION CROSS SECTIONS (BARNS)

Q VALUE (MEV)

ENERGY (MEV)	-.4392	-2.0800	-2.3910	-2.6400	-2.7050	-2.9840	-3.6780	-3.8500	-3.9150	-4.4310
2.450	5.3100-01	5.7000-02	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.500	4.9800-01	6.2000-02	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.550	4.9000-01	6.6000-02	6.0000-03	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.600	4.8200-01	7.6000-02	1.3000-02	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.650	4.7200-01	1.0500-01	2.1000-02	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.700	4.6300-01	1.3200-01	3.0000-02	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.750	4.5300-01	1.2500-01	3.9000-02	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.800	4.4600-01	1.0900-01	4.9000-02	3.0000-03	2.9000-03	0.0000	0.0000	0.0000	0.0000	0.0000
2.850	4.3600-01	1.0100-01	6.2000-02	1.1900-02	9.2000-03	0.0000	0.0000	0.0000	0.0000	0.0000
2.900	4.2800-01	9.5000-02	7.7000-02	1.6700-02	1.5500-02	0.0000	0.0000	0.0000	0.0000	0.0000
2.950	4.2000-01	9.2000-02	8.9500-02	2.1500-02	2.1100-02	0.0000	0.0000	0.0000	0.0000	0.0000
3.000	4.1200-01	9.6000-02	9.8000-02	2.6100-02	2.6100-02	0.0000	0.0000	0.0000	0.0000	0.0000
3.100	3.9700-01	1.2400-01	1.0400-01	3.5800-02	3.2400-02	0.0000	0.0000	0.0000	0.0000	0.0000
3.200	3.7800-01	1.4600-01	9.9800-02	3.8900-02	4.2000-02	2.0400-02	0.0000	0.0000	0.0000	0.0000
3.300	3.6300-01	1.6100-01	9.2000-02	4.6100-02	5.0300-02	3.4700-02	0.0000	0.0000	0.0000	0.0000
3.400	3.4900-01	1.7100-01	8.2500-02	5.0700-02	5.8200-02	4.6500-02	0.0000	0.0000	0.0000	0.0000
3.500	3.3600-01	1.7400-01	7.6700-02	5.5300-02	6.5000-02	5.6800-02	0.0000	0.0000	0.0000	0.0000
3.600	3.2300-01	1.7500-01	7.3500-02	5.8900-02	6.9300-02	6.5300-02	0.0000	0.0000	0.0000	0.0000
3.700	3.0900-01	1.7600-01	7.3000-02	6.0900-02	7.1300-02	7.2900-02	0.0000	0.0000	0.0000	0.0000
3.800	2.9700-01	1.7600-01	7.2300-02	6.1800-02	7.7100-02	7.9700-02	0.0000	0.0000	0.0000	0.0000
3.900	2.8300-01	1.7600-01	7.2200-02	6.2100-02	8.2300-02	8.6100-02	0.0000	0.0000	0.0000	0.0000
4.000	2.7200-01	1.7500-01	7.1600-02	6.2000-02	8.7300-02	8.9400-02	7.4000-03	0.0000	0.0000	0.0000
4.100	2.6000-01	1.7300-01	7.0600-02	6.1700-02	9.1200-02	9.1200-02	1.6900-02	9.9000-03	3.3000-03	0.0000
4.200	2.4900-01	1.7000-01	6.9600-02	6.1000-02	9.4000-02	9.2200-02	2.5400-02	1.9900-02	1.3900-02	0.0000
4.300	2.4000-01	1.6600-01	6.8000-02	6.0000-02	9.6200-02	9.2600-02	3.3200-02	2.6700-02	2.3100-02	0.0000
4.400	2.3200-01	1.6300-01	6.6300-02	5.8900-02	9.8000-02	9.2400-02	3.9800-02	3.6300-02	3.0800-02	0.0000
4.500	2.2300-01	1.6000-01	6.4000-02	5.7900-02	9.9200-02	9.1800-02	4.5200-02	4.2800-02	3.7300-02	0.0000
4.600	2.1400-01	1.5700-01	6.2200-02	5.6500-02	1.0030-01	9.0600-02	5.0200-02	4.9200-02	4.3100-02	0.0000
4.700	2.0800-01	1.5500-01	5.5700-02	5.5200-02	1.0130-01	8.9000-02	5.3900-02	5.4200-02	4.8200-02	3.2500-03
4.800	2.0200-01	1.5300-01	5.5300-02	5.3800-02	1.0230-01	8.7400-02	5.5200-02	5.8800-02	5.2700-02	6.2500-03
4.900	1.9600-01	1.5100-01	5.6700-02	5.2300-02	1.0320-01	8.6200-02	5.7200-02	6.2200-02	5.0700-02	8.7500-03
5.000	1.9200-01	1.4900-01	5.5000-02	5.1200-02	1.0400-01	8.5200-02	5.8900-02	6.5000-02	6.0400-02	1.1250-02
5.100	1.8700-01	1.4700-01	5.4000-02	5.0100-02	1.0480-01	8.4200-02	6.0200-02	6.7600-02	6.3200-02	1.2750-02
5.200	1.8300-01	1.4600-01	5.2900-02	4.8300-02	1.0820-01	8.3300-02	6.1000-02	6.9400-02	6.5200-02	1.4500-02
5.300	1.7900-01	1.4500-01	5.1900-02	4.8000-02	1.0680-01	8.2400-02	6.2300-02	7.1100-02	6.7200-02	1.6000-02
5.400	1.7500-01	1.4400-01	5.1100-02	4.7000-02	1.0720-01	8.1800-02	6.2800-02	7.2400-02	6.8800-02	1.7000-02
5.500	1.7200-01	1.4300-01	5.0300-02	4.6700-02	1.0760-01	8.1000-02	6.3200-02	7.3400-02	7.0300-02	1.8500-02
5.600	1.6900-01	1.4200-01	4.9700-02	4.6200-02	1.0800-01	8.0200-02	6.3400-02	7.4200-02	7.1600-02	1.9350-02
5.700	1.6600-01	1.4100-01	4.9000-02	4.6000-02	1.0820-01	7.9600-02	6.3700-02	7.4900-02	7.2600-02	2.0350-02
5.800	1.6300-01	1.4000-01	4.8300-02	4.5800-02	1.0840-01	7.9000-02	6.3900-02	7.5800-02	7.3300-02	2.1250-02

INELASTIC LEVEL EXCITATION CROSS SECTIONS (BARNS)

Q VALUE (MEV)

ENERGY (MEV)	-.4392	-2.0800	-2.3910	-2.6400	-2.7050	-2.9840	-3.6780	-3.9500	-3.9150	-4.4310
5.900	1.6200-01	1.3900-01	4.7800-02	4.5200-02	1.0880-01	7.8400-02	6.3900-02	7.6400-02	7.4400-02	2.2250-02
6.000	1.6100-01	1.3800-01	4.7200-02	4.4900-02	1.0920-01	7.8000-02	6.4000-02	7.7000-02	7.5000-02	2.2750-02
6.100	1.6000-01	1.3700-01	4.6800-02	4.4400-02	1.0980-01	7.7600-02	6.4100-02	7.7300-02	7.5900-02	2.3250-02
6.200	1.5900-01	1.3600-01	4.6200-02	4.4000-02	1.1010-01	7.7200-02	6.4100-02	7.7800-02	7.6300-02	2.3750-02
6.300	1.5800-01	1.3500-01	4.5700-02	4.3600-02	1.1030-01	7.6800-02	6.4000-02	7.8900-02	7.6900-02	2.4250-02
6.400	1.5600-01	1.3450-01	4.5200-02	4.3200-02	1.1070-01	7.6300-02	6.4000-02	7.9200-02	7.7200-02	2.4500-02
6.500	1.5400-01	1.3400-01	4.4800-02	4.3000-02	1.1110-01	7.5900-02	6.3900-02	7.9400-02	7.7500-02	2.4750-02
6.600	1.5300-01	1.3350-01	4.4500-02	4.2700-02	1.1140-01	7.5600-02	6.3700-02	7.9800-02	7.8000-02	2.5200-02
6.700	1.5200-01	1.3300-01	4.4200-02	4.2200-02	1.1180-01	7.5200-02	6.3500-02	8.0000-02	7.8200-02	2.5450-02
6.800	1.5100-01	1.3250-01	4.3800-02	4.2000-02	1.1220-01	7.4800-02	6.3300-02	8.0100-02	7.8400-02	2.5500-02
6.900	1.5000-01	1.3200-01	4.3500-02	4.1900-02	1.1240-01	7.4300-02	6.3100-02	8.0300-02	7.8800-02	2.5750-02
7.000	1.4900-01	1.3150-01	4.3200-02	4.1500-02	1.1280-01	7.4000-02	6.3000-02	8.0700-02	7.9000-02	2.6000-02
7.200	1.4700-01	1.3100-01	4.2700-02	4.1000-02	1.1330-01	7.3200-02	6.2600-02	8.0900-02	7.9400-02	2.6250-02
7.400	1.4500-01	1.3050-01	4.2200-02	4.0500-02	1.1400-01	7.2800-02	6.2400-02	8.1000-02	7.9800-02	2.6500-02
7.600	1.4300-01	1.3000-01	4.1700-02	4.0000-02	1.1460-01	7.2000-02	6.2300-02	8.1100-02	7.9900-02	2.6750-02
7.800	1.4200-01	1.2950-01	4.1200-02	3.9800-02	1.1500-01	7.1200-02	6.2200-02	8.1200-02	8.0000-02	2.6900-02
8.000	1.4000-01	1.2900-01	4.0700-02	3.9200-02	1.1540-01	7.1000-02	6.2100-02	8.1200-02	8.0000-02	2.7000-02
8.200	1.3900-01	1.2850-01	4.0200-02	3.8700-02	1.1590-01	7.0300-02	6.2000-02	8.1100-02	8.0000-02	2.7200-02
8.400	1.3600-01	1.2800-01	3.9800-02	3.8200-02	1.1600-01	6.9900-02	6.2000-02	8.0900-02	7.9900-02	2.7300-02
8.600	1.3400-01	1.2700-01	3.9400-02	3.7700-02	1.1620-01	6.9300-02	6.1800-02	8.0500-02	7.9800-02	2.7400-02
8.800	1.3200-01	1.2650-01	3.8800-02	3.7200-02	1.1650-01	6.9000-02	6.1200-02	8.0200-02	7.9400-02	2.7700-02
9.000	1.3100-01	1.2600-01	3.8400-02	3.6700-02	1.1670-01	6.8400-02	6.1000-02			2.7700-02

INELASTIC LEVEL EXCITATION CROSS SECTIONS (BARNS)

Q VALUE (MEV)

ENERGY (MEV)	-4.7780	-6.2000	-7.1100	-7.7900
.458	0.0000	0.0000	0.0000	0.0000
.500	0.0000	0.0000	0.0000	0.0000
.550	0.0000	0.0000	0.0000	0.0000
.600	0.0000	0.0000	0.0000	0.0000
.650	0.0000	0.0000	0.0000	0.0000
.700	0.0000	0.0000	0.0000	0.0000
.750	0.0000	0.0000	0.0000	0.0000
.800	0.0000	0.0000	0.0000	0.0000
.850	0.0000	0.0000	0.0000	0.0000
.900	0.0000	0.0000	0.0000	0.0000
.950	0.0000	0.0000	0.0000	0.0000
1.000	0.0000	0.0000	0.0000	0.0000
1.050	0.0000	0.0000	0.0000	0.0000
1.100	0.0000	0.0000	0.0000	0.0000
1.150	0.0000	0.0000	0.0000	0.0000
1.200	0.0000	0.0000	0.0000	0.0000
1.250	0.0000	0.0000	0.0000	0.0000
1.300	0.0000	0.0000	0.0000	0.0000
1.350	0.0000	0.0000	0.0000	0.0000
1.400	0.0000	0.0000	0.0000	0.0000
1.450	0.0000	0.0000	0.0000	0.0000
1.500	0.0000	0.0000	0.0000	0.0000
1.550	0.0000	0.0000	0.0000	0.0000
1.600	0.0000	0.0000	0.0000	0.0000
1.650	0.0000	0.0000	0.0000	0.0000
1.700	0.0000	0.0000	0.0000	0.0000
1.750	0.0000	0.0000	0.0000	0.0000
1.800	0.0000	0.0000	0.0000	0.0000
1.850	0.0000	0.0000	0.0000	0.0000
1.900	0.0000	0.0000	0.0000	0.0000
1.950	0.0000	0.0000	0.0000	0.0000
2.000	0.0000	0.0000	0.0000	0.0000
2.050	0.0000	0.0000	0.0000	0.0000
2.100	0.0000	0.0000	0.0000	0.0000
2.150	0.0000	0.0000	0.0000	0.0000
2.200	0.0000	0.0000	0.0000	0.0000
2.250	0.0000	0.0000	0.0000	0.0000
2.300	0.0000	0.0000	0.0000	0.0000
2.350	0.0000	0.0000	0.0000	0.0000
2.400	0.0000	0.0000	0.0000	0.0000

INELASTIC LEVEL EXCITATION CROSS SECTIONS (BARNS)

Q VALUE (MEV)

ENERGY (MEV)	-4.7780	-6.2000	-7.1100	-7.7900
2.450	0.0000	0.0000	0.0000	0.0000
2.500	0.0000	0.0000	0.0000	0.0000
2.550	0.0000	0.0000	0.0000	0.0000
2.600	0.0000	0.0000	0.0000	0.0000
2.650	0.0000	0.0000	0.0000	0.0000
2.700	0.0000	0.0000	0.0000	0.0000
2.750	0.0000	0.0000	0.0000	0.0000
2.800	0.0000	0.0000	0.0000	0.0000
2.850	0.0000	0.0000	0.0000	0.0000
2.900	0.0000	0.0000	0.0000	0.0000
2.950	0.0000	0.0000	0.0000	0.0000
3.000	0.0000	0.0000	0.0000	0.0000
3.100	0.0000	0.0000	0.0000	0.0000
3.200	0.0000	0.0000	0.0000	0.0000
3.300	0.0000	0.0000	0.0000	0.0000
3.400	0.0000	0.0000	0.0000	0.0000
3.500	0.0000	0.0000	0.0000	0.0000
3.600	0.0000	0.0000	0.0000	0.0000
3.700	0.0000	0.0000	0.0000	0.0000
3.800	0.0000	0.0000	0.0000	0.0000
3.900	0.0000	0.0000	0.0000	0.0000
4.000	0.0000	0.0000	0.0000	0.0000
4.100	0.0000	0.0000	0.0000	0.0000
4.200	0.0000	0.0000	0.0000	0.0000
4.300	0.0000	0.0000	0.0000	0.0000
4.400	0.0000	0.0000	0.0000	0.0000
4.500	0.0000	0.0000	0.0000	0.0000
4.600	0.0000	0.0000	0.0000	0.0000
4.700	0.0000	0.0000	0.0000	0.0000
4.800	0.0000	0.0000	0.0000	0.0000
4.900	0.0000	0.0000	0.0000	0.0000
5.000	0.0000	0.0000	0.0000	0.0000
5.100	8.0000-03	0.0000	0.0000	0.0000
5.200	1.5000-02	0.0000	0.0000	0.0000
5.390	2.0000-02	0.0000	0.0000	0.0000
5.400	2.4500-02	0.0000	0.0000	0.0000
5.500	2.9500-02	0.0000	0.0000	0.0000
5.600	3.3000-02	0.0000	0.0000	0.0000
5.700	3.7000-02	0.0000	0.0000	0.0000
5.800	4.0000-02	0.0000	0.0000	0.0000

INELASTIC LEVEL EXCITATION CROSS SECTIONS (BARNS)

Q VALUE (MEV)

ENERGY (MEV)	-4.7780	-6.2000	-7.1100	-7.7900
5.900	4.3500-02	0.0000	0.0000	0.0000
6.000	4.6000-02	0.0000	0.0000	0.0000
6.100	4.8000-02	0.0000	0.0000	0.0000
6.200	5.0000-02	0.0000	0.0000	0.0000
6.300	5.1500-02	0.0000	0.0000	0.0000
6.400	5.3500-02	0.0000	0.0000	0.0000
6.500	5.5000-02	0.0000	0.0000	0.0000
6.600	5.6500-02	0.0000	0.0000	0.0000
6.700	5.7700-02	4.8000-03	0.0000	0.0000
6.800	5.8500-02	5.4000-03	0.0000	0.0000
6.900	5.9500-02	6.0000-03	0.0000	0.0000
7.000	6.0500-02	6.6500-03	.0000	0.0000
7.200	6.2000-02	8.8500-03	0.0000	0.0000
7.400	6.3000-02	1.0650-02	0.0000	0.0000
7.600	6.4000-02	1.2200-02	4.5000-03	0.0000
7.800	6.5000-02	1.3500-02	9.2500-03	0.0000
8.000	6.6000-02	1.5500-02	1.3850-02	0.0000
8.200	6.7000-02	1.6250-02	1.8000-02	2.3000-03
8.400	6.7200-02	1.6900-02	2.1750-02	5.8000-03
8.600	6.7400-02	1.7200-02	2.5250-02	9.0000-03
8.800	6.7500-02	1.7600-02	2.8250-02	1.1700-02
9.000			3.1080-02	1.4400-02

A-44

GAMMA RAY PRODUCTION CROSS SECTIONS -INELASTIC NEUTRON SCATTERING- (BARNS)

EXCITATION LEVEL (MEV)

NEUTRON ENERGY (MEV)	.4392	2.0800	2.0800	2.3910	2.3910	2.6400	2.7050	2.7050	2.9840	2.9840
					GAMMA RAY ENERGY (MEV)					
	.4392	2.0800	1.6400	2.3910	1.9520	2.6400	2.2660	.6250	2.9840	2.5450
.458	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
.500	2.0000-02	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
.550	5.7000-02	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
.600	1.3000-01	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
.650	2.0000-01	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
.700	2.5000-01	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
.750	2.8800-01	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
.800	3.1800-01	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
.850	3.4500-01	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
.900	3.6500-01	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
.950	3.8500-01	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.000	4.2300-01	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.050	5.3000-01	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.100	6.3700-01	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.150	6.6400-01	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.200	6.7000-01	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.250	6.5000-01	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.300	4.3000-01	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.350	3.6800-01	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.400	3.0700-01	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.450	2.9600-01	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.500	3.6800-01	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.550	4.2300-01	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.600	4.7000-01	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.650	5.2000-01	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.700	5.8000-01	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.750	6.2200-01	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.800	6.4500-01	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.850	6.5400-01	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.900	6.5200-01	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

GAMMA RAY PRODUCTION CROSS SECTIONS —INELASTIC NEUTRON SCATTERING— (BARNS)

NEUTRON ENERGY (MEV)	EXCITATION LEVEL (MEV)								
	.4392	2.0800	2.3910	2.3910	2.6400	2.7050	2.7050	2.9840	2.9840
	GAMMA RAY ENERGY (MEV)								
	.4392	2.0800	2.3910	1.9520	2.6400	2.2660	.6250	2.9840	2.5450
1.950	6.4700-01	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.000	6.5200-01	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.050	6.6800-01	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.100	6.8700-01	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.150	6.9600-01	1.7300-02	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.200	7.0320-01	3.6400-02	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.250	6.9040-01	4.1000-02	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.300	6.6800-01	4.4600-02	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.350	6.3860-01	4.8200-02	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.400	6.1220-01	5.1900-02	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.450	5.8290-01	5.6400-02	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.500	5.5440-01	6.0100-02	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.550	5.5200-01	6.9200-02	4.0000-03	2.0000-03	0.0000	0.0000	0.0000	0.0000	0.0000
2.600	5.5550-01	9.5600-02	8.7000-03	4.3000-03	0.0000	0.0000	0.0000	0.0000	0.0000
2.650	5.7450-01	1.2010-01	1.4100-02	6.9000-03	0.0000	0.0000	0.0000	0.0000	0.0000
2.700	5.9300-01	1.1380-01	2.0100-02	9.9000-03	0.0000	0.0000	0.0000	0.0000	0.0000
2.750	5.7960-01	9.9200-02	2.6100-02	1.2900-02	3.0000-03	0.0000	0.0000	0.0000	0.0000
2.800	5.6140-01	9.2800-02	3.2800-02	1.6200-02	1.1900-02	0.0000	0.0000	0.0000	0.0000
2.850	5.5120-01	9.1000-02	4.1500-02	2.0500-02	1.6700-02	2.0000-03	9.0000-04	0.0000	0.0000
2.900	5.4680-01	8.8200-02	5.1600-02	2.5400-02	2.1500-02	6.3000-03	2.9000-03	0.0000	0.0000
2.950	5.4810-01	8.7000-02	6.0000-02	2.9500-02	2.6100-02	1.0400-02	4.9000-03	0.0000	0.0000
3.000	5.5220-01	9.2000-02	6.5700-02	3.2300-02	3.3800-02	1.4300-02	6.8000-03	0.0000	0.0000
3.100	5.7560-01	9.3500-02	6.9700-02	3.4300-02	4.0300-02	2.2000-02	1.0400-02	0.0000	0.0000
3.200	5.9270-01	1.2230-01	6.1600-02	3.2700-02	4.6100-02	2.8600-02	1.3400-02	0.0000	6.2000-03
3.300	6.0730-01	1.4510-01	5.5300-02	3.0400-02	5.0700-02	3.4200-02	1.6100-02	1.2200-02	1.8600-02
3.400	6.0690-01	1.6120-01	5.1400-02	2.7200-02	5.3900-02	3.9600-02	1.8800-02	2.7900-02	1.8600-02
3.500	6.0550-01	1.7260-01	4.9200-02	2.5300-02	5.5300-02	4.4200-02	2.0800-02	3.4100-02	2.2700-02
3.600	6.0190-01	1.7730-01	4.8900-02	2.4300-02	5.8900-02	4.8500-02	2.2800-02	3.9200-02	2.6100-02
3.700	5.9730-01	1.8000-01	4.8400-02	2.4100-02	6.0900-02	5.2400-02	2.4700-02	4.3700-02	2.9200-02
3.800	5.9280-01	1.8410-01	4.8400-02	2.3900-02	6.1800-02	5.6000-02	2.6300-02	4.7800-02	3.1900-02

GAMMA RAY PRODUCTION CROSS SECTIONS -INELASTIC NEUTRON SCATTERING- (BARNS)

NEUTRON ENERGY (MEV)	EXCITATION LEVEL (MEV)								
	.4392	2.0800	2.0800	2.3910	2.6400	2.7050	2.7050	2.9040	2.9040
	GAMMA RAY ENERGY (MEV)								
	.4392	2.0800	1.6400	2.3910	2.6400	2.2660	.6250	2.9840	2.5450
3.900	5.9210-01	1.8400-02	1.8630-01	4.8400-02	6.3200-02	5.9400-02	2.7900-02	5.1700-02	3.4400-02
4.000	5.9270-01	1.8500-02	1.8730-01	4.8800-02	6.4500-02	6.2000-02	2.9200-02	5.3600-02	3.5800-02
4.100	5.9400-01	1.9000-02	1.9160-01	4.7360-02	6.5500-02	6.3900-02	3.0100-02	5.4700-02	3.6500-02
4.200	5.9340-01	1.9300-02	1.9480-01	4.6600-02	6.6000-02	6.5400-02	3.0800-02	5.5300-02	3.6900-02
4.300	5.9530-01	1.9400-02	1.9630-01	4.5700-02	6.6000-02	6.6600-02	3.1400-02	5.5600-02	3.7000-02
4.400	5.9440-01	1.9600-02	1.9780-01	4.4400-02	6.5700-02	6.7500-02	3.1700-02	5.5400-02	3.7000-02
4.500	5.9100-01	1.9700-02	1.9880-01	4.3000-02	6.5400-02	6.8200-02	3.2100-02	5.5100-02	3.6700-02
4.600	5.8540-01	1.9700-02	1.9960-01	4.1700-02	6.4400-02	6.8900-02	3.2400-02	5.4400-02	3.6200-02
4.700	5.8230-01	1.9800-02	2.0050-01	4.0260-02	6.3500-02	6.9600-02	3.2700-02	5.3400-02	3.5600-02
4.800	5.7670-01	1.9900-02	2.0120-01	3.9000-02	6.2400-02	7.0200-02	3.3000-02	5.2400-02	3.5000-02
4.900	5.7440-01	1.9900-02	2.0140-01	3.8000-02	6.1100-02	7.0700-02	3.3300-02	5.1700-02	3.4500-02
5.000	5.7150-01	1.9900-02	2.0120-01	3.6900-02	6.0200-02	7.1300-02	3.3500-02	5.1100-02	3.4100-02
5.100	5.7340-01	2.0000-02	2.0220-01	3.6260-02	5.9900-02	7.1900-02	3.3700-02	5.0900-02	3.4000-02
5.200	5.7640-01	2.0100-02	2.0370-01	3.5400-02	5.9700-02	7.2200-02	3.3900-02	5.0600-02	3.3900-02
5.300	5.7710-01	2.0200-02	2.0460-01	3.4800-02	5.9100-02	7.2600-02	3.4000-02	5.0600-02	3.3800-02
5.400	5.7740-01	2.0300-02	2.0540-01	3.4200-02	5.9300-02	7.2900-02	3.4200-02	5.0400-02	3.3700-02
5.500	5.7870-01	2.0400-02	2.0600-01	3.3700-02	5.8700-02	7.3300-02	3.4300-02	5.0400-02	3.3600-02
5.600	5.7670-01	2.0400-02	2.0630-01	3.3300-02	5.8700-02	7.3400-02	3.4500-02	5.0100-02	3.3400-02
5.700	5.7860-01	2.0400-02	2.0650-01	3.2900-02	5.8500-02	7.3700-02	3.4600-02	5.0100-02	3.3400-02
5.800	5.7810-01	2.0400-02	2.0670-01	3.2400-02	5.8400-02	7.4000-02	3.4700-02	4.9800-02	3.3200-02
5.900	5.7960-01	2.0500-02	2.0690-01	3.2000-02	5.8000-02	7.4300-02	3.4800-02	4.9700-02	3.3100-02
6.000	5.8030-01	2.0400-02	2.0660-01	3.1600-02	5.8000-02	7.4700-02	3.4900-02	4.9600-02	3.3000-02
6.100	5.8100-01	2.0400-02	2.0640-01	3.1700-02	5.7600-02	7.4900-02	3.5100-02	4.9400-02	3.3000-02
6.200	5.8130-01	2.0400-02	2.0630-01	3.1800-02	5.7400-02	7.5000-02	3.5200-02	4.9300-02	3.2900-02
6.300	5.8110-01	2.0400-02	2.0640-01	3.2100-02	5.7100-02	7.5300-02	3.5300-02	4.9200-02	3.2800-02
6.400	5.8090-01	2.0400-02	2.0640-01	3.2300-02	5.6800-02	7.5400-02	3.5400-02	4.9000-02	3.2700-02
6.500	5.8020-01	2.0400-02	2.0640-01	3.2300-02	5.6700-02	7.5500-02	3.5500-02	4.8800-02	3.2600-02
6.600	5.8040-01	2.0400-02	2.0640-01	3.2600-02	5.6500-02	7.5600-02	3.5600-02	4.8800-02	3.2500-02
6.700	5.8670-01	2.0400-02	2.0640-01	3.2800-02	5.6100-02	7.6000-02	3.5800-02	4.8600-02	3.2400-02
6.800	5.7990-01	2.0400-02	2.0630-01	3.3000-02	5.5900-02	7.6300-02	3.5900-02	4.8400-02	3.2300-02

GAMMA RAY PRODUCTION CROSS SECTIONS -INELASTIC NEUTRON SCATTERING- (BARNS)

EXCITATION LEVEL (MEV)

GAMMA RAY ENERGY (MEV)

NEUTRON ENERGY (MEV)	EXCITATION: .4392	2.0800	2.0800	2.3910	2.3910	2.6400	2.7050	2.7050	2.9840	2.9840
GAMMA:	.4392	2.0800	1.6400	2.3910	1.9520	2.6400	2.2660	.6250	2.9040	2.5450
6.900	5.7940-01	2.0400-02	2.0610-01	3.3200-02	1.6300-02	5.5800-02	7.6400-02	3.6000-02	4.8200-02	3.2100-02
7.000	5.7920-01	2.0400-02	2.0610-01	3.3400-02	1.6500-02	5.5500-02	7.6700-02	3.6100-02	4.8000-02	3.2000-02
7.200	5.7870-01	2.0400-02	2.0620-01	3.4600-02	1.7000-02	5.5000-02	7.7000-02	3.6300-02	4.7600-02	3.1800-02
7.400	5.7810-01	2.0400-02	2.0620-01	3.5400-02	1.7500-02	5.4600-02	7.7500-02	3.6500-02	4.7500-02	3.1600-02
7.600	5.7810-01	2.0400-02	2.0610-01	3.6100-02	1.7800-02	5.4700-02	7.7900-02	3.6700-02	4.7100-02	3.1400-02
7.800	5.7900-01	2.0400-02	2.0600-01	3.6600-02	1.7600-02	5.5100-02	7.8200-02	3.6800-02	4.6800-02	3.1200-02
8.000	5.7890-01	2.0400-02	2.0590-01	3.7100-02	1.8000-02	5.5100-02	7.8500-02	3.6900-02	4.6600-02	3.1200-02
8.200	5.7920-01	2.0300-02	2.0570-01	3.7300-02	1.8000-02	5.5200-02	7.8800-02	3.7100-02	4.6500-02	3.1000-02
8.400	5.7800-01	2.0300-02	2.0530-01	3.7600-02	1.0500-02	5.5100-02	7.8900-02	3.7100-02	4.6400-02	3.0900-02
8.600	5.7400-01	2.0200-02	2.0440-01	3.7700-02	1.8500-02	5.5000-02	7.9000-02	3.7200-02	4.6100-02	3.0700-02
8.800	5.7180-01	2.0200-02	2.0380-01	3.7600-02	1.8500-02	5.4000-02	7.9200-02	3.7300-02	4.5600-02	3.0600-02
9.000	5.7060-01	2.0100-02	2.0330-01	3.7500-02	1.8500-02	5.4600-02	7.9400-02	3.7300-02	0.0000	3.0400-02
10.000	5.7000-01	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12.000	5.0800-01	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14.000	4.6900-01	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16.000	4.3100-01	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18.000	3.9600-01	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20.000	3.6300-01	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

GAMMA RAY PRODUCTION CROSS SECTIONS -INELASTIC NEUTRON SCATTERING- (BARNS)

EXCITATION LEVEL (MEV)

NEUTRON ENERGY (MEV)	3.6780	3.6780	3.6780	3.6740	3.6500	3.6500	3.9150	3.9150	4.4310
	GAMMA RAY ENERGY (MEV)								
	3.6780	3.2390	1.5980	1.0360	3.6500	1.7700	3.9150	3.4760	4.4310
.458	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
.500	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
.550	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
.600	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
.650	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
.700	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
.750	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
.800	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
.850	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
.900	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
.950	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.050	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.100	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.150	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.200	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.250	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.300	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.350	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.400	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.450	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.500	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.550	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.600	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.650	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.700	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.750	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.800	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.850	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.900	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

GAMMA RAY PRODUCTION CROSS SECTIONS -INELASTIC NEUTRON SCATTERING- (BARNS)

EXCITATION LEVEL (MEV)

	3.6780	3.6780	3.6700	3.6740	3.8500	3.8500	3.9150	3.9150	4.4310

GAMMA RAY ENERGY (MEV)

NEUTRON ENERGY (MEV)	3.6780	3.2390	1.5980	1.0360	3.8500	1.7700	3.9150	3.4760	4.4310
1.950	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.050	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.100	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.150	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.200	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.250	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.300	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.350	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.400	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.450	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.500	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.550	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.600	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.650	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.700	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.750	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.800	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.850	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.900	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.950	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.100	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.200	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.300	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.400	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.500	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.600	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.700	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.800	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

GAMMA RAY PRODUCTION CROSS SECTIONS -INELASTIC NEUTRON SCATTERING- (BARNS)

Header (each data column is identified by its EXCITATION LEVEL (MEV) over its GAMMA RAY ENERGY (MEV)):

NEUTRON ENERGY (MEV)	EXC 3.6780 / γ 3.6780	EXC 3.6780 / γ 3.2390	EXC 3.6780 / γ 1.5980	EXC 3.6780 / γ 1.0360	EXC 3.8500 / γ 3.8500	EXC 3.8500 / γ 1.7700	EXC 3.9150 / γ 3.9150	EXC 3.9150 / γ 3.4760	EXC 4.4310 / γ 4.4310
3.900	3.0000-04	5.3000-03	7.0000-04	1.1000-03	0.0000	0.0000	0.0000	0.0000	0.0000
4.000	7.0000-04	1.2000-02	1.7000-03	2.5000-03	0.0000	0.0000	0.0000	0.0000	0.0000
4.100	1.0000-03	1.8000-02	2.5000-03	3.8000-03	5.0000-03	5.0000-03	2.6000-03	7.0000-04	0.0000
4.200	1.3000-03	2.3600-02	3.3000-03	5.0000-03	1.0000-02	1.0000-02	1.1100-02	2.6000-03	0.0000
4.300	1.6000-03	2.8300-02	4.0000-03	6.0000-03	1.4400-02	1.4400-02	1.8500-02	4.6000-03	0.0000
4.400	1.8000-03	3.2100-02	4.5000-03	6.8000-03	1.8200-02	1.8200-02	2.4600-02	7.5000-03	0.0000
4.500	2.0000-03	3.5600-02	5.0000-03	7.5000-03	2.1400-02	2.1400-02	2.9800-02	9.6000-03	3.2500-03
4.600	2.1000-03	3.7600-02	5.3000-03	7.9000-03	2.4600-02	2.4600-02	3.4500-02	1.0500-02	6.2500-03
4.700	2.2000-03	3.9200-02	5.5000-03	8.3000-03	2.7100-02	2.7100-02	3.8600-02	1.1300-02	8.7500-03
4.800	2.3000-03	4.0600-02	5.7000-03	8.6000-03	2.9400-02	2.9400-02	4.2200-02	1.2100-02	1.0000-02
4.900	2.4000-03	4.1800-02	5.9000-03	8.8000-03	3.1100-02	3.1100-02	4.5400-02	1.3000-02	1.1250-02
5.000	2.4000-03	4.2700-02	6.0000-03	9.0000-03	3.2500-02	3.2500-02	4.8400-02	1.3400-02	1.2750-02
5.100	2.5000-03	4.3600-02	6.1000-03	9.2000-03	3.3900-02	3.3900-02	5.0300-02	1.3600-02	1.4500-02
5.200	2.5000-03	4.4400-02	6.3000-03	9.4000-03	3.4700-02	3.4700-02	5.0600-02	1.4100-02	1.6000-02
5.300	2.6000-03	4.4900-02	6.4000-03	9.5000-03	3.5600-02	3.5600-02	5.2200-02	1.4300-02	1.7000-02
5.400	2.6000-03	4.5500-02	6.5000-03	9.6000-03	3.6200-02	3.6200-02	5.3800-02	1.4500-02	1.8500-02
5.500	2.6000-03	4.5900-02	6.6000-03	9.7000-03	3.6700-02	3.6700-02	5.5000-02	1.4700-02	1.9350-02
5.600	2.6000-03	4.6200-02	6.6000-03	9.8000-03	3.7100-02	3.7100-02	5.6200-02	1.4900-02	2.0350-02
5.700	2.6000-03	4.6500-02	6.6000-03	9.8000-03	3.7500-02	3.7500-02	5.7300-02	1.5000-02	2.1200-02
5.800	2.7000-03	4.6800-02	6.7000-03	9.9000-03	3.7900-02	3.7900-02	5.8100-02	1.5200-02	2.2250-02
5.900	2.7000-03	4.6900-02	6.7000-03	9.9000-03	3.8200-02	3.8200-02	5.8900-02	1.5300-02	2.2750-02
6.000	2.7000-03	4.7100-02	6.7000-03	1.0000-02	3.8500-02	3.8500-02	5.9500-02	1.5400-02	2.3250-02
6.100	2.7000-03	4.7200-02	6.7000-03	1.0000-02	3.8700-02	3.8700-02	6.0000-02	1.5400-02	2.3750-02
6.200	2.7000-03	4.7300-02	6.7000-03	1.0000-02	3.9000-02	3.9000-02	6.0700-02	1.5500-02	2.4250-02
6.300	2.7000-03	4.7300-02	6.7000-03	1.0000-02	3.9100-02	3.9100-02	6.1000-02	1.5600-02	2.4500-02
6.400	2.7000-03	4.7300-02	6.7000-03	1.0000-02	3.9500-02	3.9500-02	6.1800-02	1.6000-02	2.4750-02
6.500	2.7000-03	4.7200-02	6.7000-03	1.0000-02	3.9600-02	3.9600-02	6.2000-02	1.6000-02	2.5200-02
6.600	2.7000-03	4.7100-02	6.5000-03	1.0000-02	3.9700-02	3.9700-02	6.2400-02	1.5600-02	2.5400-02
6.700	2.7000-03	4.7000-02	6.6000-03	9.9000-03	3.9900-02	3.9900-02	6.2600-02	1.5700-02	2.5500-02
6.800	2.6000-03	4.7000-02	6.6000-03	9.9000-03	4.0000-02	4.0000-02	6.2700-02	1.5700-02	2.5600-02

GAMMA RAY PRODUCTION CROSS SECTIONS -INELASTIC NEUTRON SCATTERING- (BARNS)

EXCITATION LEVEL (MEV)

	3.6780	3.6780	3.6780	3.8500	3.8500	3.6760	3.9150	3.9150	4.4310

GAMMA RAY ENERGY (MEV)

Neutron Energy (MEV)	3.6780	3.2390	1.5980	3.8500	1.7700	1.0560	3.9150	3.4760	4.4310
6.900	2.6000-03	4.6900-02	6.6000-03	4.0100-02	4.0100-02	9.9000-03	6.3000-02	1.5000-02	2.5700-02
7.000	2.6000-03	4.6900-02	6.6000-03	4.0200-02	4.0200-02	9.9000-03	6.3200-02	1.5800-02	2.6000-02
7.200	2.6000-03	4.6600-02	6.6000-03	4.0400-02	4.0400-02	9.9000-03	6.3500-02	1.5800-02	2.6200-02
7.400	2.6000-03	4.6500-02	6.6000-03	4.0500-02	4.0500-02	9.8000-03	6.3800-02	1.5900-02	2.6500-02
7.600	2.6000-03	4.6500-02	6.6000-03	4.0500-02	4.0600-02	9.8000-03	6.3900-02	1.6000-02	2.6700-02
7.800	2.6000-03	4.6400-02	6.5000-03	4.0600-02	4.0600-02	9.8000-03	6.4000-02	1.6000-02	2.6900-02
8.000	2.6000-03	4.6400-02	6.5000-03	4.0600-02	4.0600-02	9.8000-03	6.4000-02	1.6000-02	2.7000-02
8.200	2.6000-03	4.6400-02	6.5000-03	4.0600-02	4.0600-02	9.8000-03	6.4000-02	1.6000-02	2.7200-02
8.400	2.6000-03	4.6300-02	6.5000-03	4.0500-02	4.0500-02	9.8000-03	6.3900-02	1.6000-02	2.7300-02
8.600	2.5000-03	4.5800-02	6.5000-03	4.0300-02	4.0300-02	9.7000-03	6.3800-02	1.5900-02	2.7400-02
8.800	2.6000-03	4.5700-02	6.4000-03	4.0100-02	4.0100-02	9.7000-03	6.3500-02	1.5900-02	2.7500-02
9.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	2.7000-02
10.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

GAMMA RAY PRODUCTION CROSS SECTIONS -INELASTIC NEUTRON SCATTERING- (BARNS)

EXCITATION LEVEL (MEV)

NEUTRON ENERGY (MEV)	4.7780	4.7780	4.7780	4.7780	4.7780	6.2700	7.2100	7.2100	7.2100	7.2100
	GAMMA RAY ENERGY (MEV)									
	4.3390	2.6980	1.7940	1.1000	3.8800	7.2100	6.6600	4.4200	4.1600	
.458	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
.500	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
.550	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
.600	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
.650	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
.700	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
.750	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
.800	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
.850	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
.900	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
.950	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.050	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.100	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.150	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.200	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.250	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.300	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.350	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.400	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.450	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.500	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.550	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.600	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.650	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.700	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.750	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.800	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.850	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.900	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

GAMMA RAY PRODUCTION CROSS SECTIONS -INELASTIC NEUTRON SCATTERING- (BARNS)

EXCITATION LEVEL (MEV)

	4.7780	4.7780	4.7780	4.7780	6.2700	7.2100	7.2100	7.2100	7.2100	7.2105

GAMMA RAY ENERGY (MEV)

NEUTRON ENERGY (MEV)	4.7780	4.3390	2.6900	1.7940	1.1000	3.8800	7.2100	6.6600	4.4200	4.1600
1.950	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.050	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.100	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.150	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.200	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.250	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.300	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.350	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.400	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.450	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.500	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.550	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.600	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.650	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.700	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.750	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.800	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.850	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.900	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.950	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.100	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.200	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.300	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.400	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.500	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.600	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.700	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.800	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

GAMMA RAY PRODUCTION CROSS SECTION -INELASTIC NEUTRON SCATTERING- (BARNS)

EXCITATION LEVEL (MEV)

NEUTRON ENERGY (MEV)	4.7780	4.7780	4.7780	4.7740	4.7740	6.2700	7.2100	7.2100	7.2100	7.2100
GAMMA RAY ENERGY (MEV)	4.7780	4.3390	2.6980	1.7940	1.1000	3.8800	7.2100	6.6600	4.4200	4.1600
3.900	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.100	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.200	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.300	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.400	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.500	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.600	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.700	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.800	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.900	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5.100	4.0000-04	4.8000-03	1.6000-03	8.0000-04	4.0000-04	0.0000	0.0000	0.0000	0.0000	0.0000
5.200	8.0000-04	9.0000-03	3.0000-03	1.5000-03	8.0000-04	0.0000	0.0000	0.0000	0.0000	0.0000
5.300	1.0000-03	1.2000-02	4.0000-03	2.0000-03	1.0000-03	0.0000	0.0000	0.0000	0.0000	0.0000
5.400	1.2000-03	1.4700-02	4.9000-03	2.5000-03	1.2000-03	0.0000	0.0000	0.0000	0.0000	0.0000
5.500	1.5000-03	1.7700-02	5.9000-03	2.9000-03	1.5000-03	0.0000	0.0000	0.0000	0.0000	0.0000
5.600	1.7000-03	1.9800-02	6.6000-03	3.3000-03	1.7000-03	0.0000	0.0000	0.0000	0.0000	0.0000
5.700	1.9000-03	2.2200-02	7.4000-03	3.7000-03	1.9000-03	0.0000	0.0000	0.0000	0.0000	0.0000
5.800	2.0000-03	2.4000-02	8.0000-03	4.0000-03	2.0000-03	0.0000	0.0000	0.0000	0.0000	0.0000
5.900	2.2000-03	2.6100-02	8.7000-03	4.4000-03	2.2000-03	0.0000	0.0000	0.0000	0.0000	0.0000
6.000	2.3000-03	2.7600-02	9.2000-03	4.6000-03	2.3000-03	0.0000	0.0000	0.0000	0.0000	0.0000
6.100	2.4000-03	2.8800-02	9.6000-03	4.8000-03	2.4000-03	0.0000	0.0000	0.0000	0.0000	0.0000
6.200	2.5000-03	3.0000-02	1.0000-02	5.0000-03	2.5000-03	0.0000	0.0000	0.0000	0.0000	0.0000
6.300	2.6000-03	3.0900-02	1.0300-02	5.2000-03	2.6000-03	0.0000	0.0000	0.0000	0.0000	0.0000
6.400	2.7000-03	3.2100-02	1.0700-02	5.4000-03	2.7000-03	0.0000	0.0000	0.0000	0.0000	0.0000
6.500	2.8000-03	3.3000-02	1.1000-02	5.5000-03	2.8000-03	0.0000	0.0000	0.0000	0.0000	0.0000
6.600	2.8000-03	3.3900-02	1.1300-02	5.7000-03	2.8000-03	0.0000	0.0000	0.0000	0.0000	0.0000
6.700	2.9000-03	3.4600-02	1.1500-02	5.8000-03	2.9000-03	4.8000-03	0.0000	0.0000	0.0000	0.0000
6.800	3.0000-03	3.5100-02	1.1700-02	5.9000-03	3.0000-03	5.4000-03	0.0000	0.0000	0.0000	0.0000

A-55

GAMMA RAY PRODUCTION CROSS SECTIONS -INELASTIC NEUTRON SCATTERING- (BARNS)

NEUTRON ENERGY (MEV)	EXCITATION LEVEL (MEV) 4.7780	4.7780	4.7780	4.7780	6.2700	7.2100	7.2100	7.2100	7.2100
	GAMMA RAY ENERGY (MEV) 4.7780	4.3390	2.6980	1.7940	1.1000	3.8600	6.6600	4.4200	4.1600
6.900	3.0000-03	3.5700-02	1.1900-02	6.0000-03	6.0000-03	0.0000	0.0000	0.0000	0.0000
7.000	3.0000-03	3.6300-02	1.2100-02	6.1000-03	6.7000-03	0.0000	0.0000	0.0000	0.0000
7.200	3.0000-03	3.7200-02	1.2400-02	6.2000-03	8.9000-03	0.0000	0.0000	0.0000	0.0000
7.400	3.2000-03	3.7800-02	1.2600-02	6.3000-03	1.0700-02	2.9000-03	1.0000-03	5.0000-04	0.0000
7.600	3.3000-03	3.8400-02	1.2800-02	6.4000-03	1.2200-02	5.9000-03	2.0000-03	1.1000-03	1.0000-04
7.800	3.3000-03	3.9000-02	1.3000-02	6.5000-03	1.3500-02	8.8000-03	3.1000-03	1.7000-03	3.0000-04
8.000	3.3000-03	3.9600-02	1.3200-02	6.6000-03	1.4600-02	1.1300-02	4.0000-03	2.2000-03	4.0000-04
8.200	3.4000-03	4.0200-02	1.3300-02	6.7000-03	1.5500-02	1.3700-02	4.8000-03	2.6000-03	5.0000-04
8.400	3.4000-03	4.0300-02	1.3400-02	6.7000-03	1.6300-02	1.5900-02	5.6000-03	3.0000-03	7.0000-04
8.600	3.4000-03	4.0400-02	1.3400-02	6.7000-03	1.6900-02	1.7800-02	6.2000-03	3.4000-03	8.0000-04
8.800	3.4000-03	4.0500-02	1.3500-02	6.8000-03	1.7300-02	1.9600-02	6.8000-03	3.7000-03	9.0000-04
9.000	0.0000	0.0000	0.0000	0.0000	1.7600-02	0.0000	0.0000	0.0000	0.0000
10.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

ENERGY DISTRIBUTION OF SECONDARY NEUTRONS -INELASTIC CONTINUUM-   (BARNS PER MEV)

SECONDARY NEUTRON ENERGY (MEV)	INCIDENT NEUTRON ENERGY (MEV)									
	9.000	9.500	10.050	10.500	11.000	11.500	12.000	12.500	13.000	13.500
.010	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
.050	1.8209-02	1.6837-02	1.5206-02	1.4477-02	1.3484-02	1.2597-02	1.1879-02	1.1191-02	1.0460-02	9.6655-03
.100	3.5272-02	3.2643-02	2.9505-02	2.8110-02	2.6200-02	2.4492-02	2.3108-02	2.1783-02	2.0372-02	1.8833-02
.200	6.6176-02	6.1348-02	5.5546-02	5.2990-02	4.9455-02	4.6291-02	4.3728-02	4.1265-02	3.8633-02	3.5750-02
.300	9.3117-02	8.6470-02	7.8428-02	7.4917-02	7.0015-02	6.5619-02	6.2059-02	5.8629-02	5.4947-02	5.0898-02
.400	1.1647-01	1.0834-01	9.8432-02	9.4149-02	8.8108-02	8.2681-02	7.8288-02	7.4044-02	6.9462-02	6.4412-02
.550	1.3657-01	1.2725-01	1.1582-01	1.1092-01	1.0395-01	9.7668-02	9.2590-02	8.7668-02	8.2337-02	7.6420-02
.750	1.7459-01	1.6646-01	1.4934-01	1.4350-01	1.3493-01	1.2719-01	1.2093-01	1.1482-01	1.0813-01	1.0061-01
1.000	1.9841-01	1.8646-01	1.7117-01	1.6502-01	1.5569-01	1.4722-01	1.4040-01	1.3368-01	1.2622-01	1.1773-01
1.250	2.1137-01	1.9949-01	1.8393-01	1.7790-01	1.6842-01	1.5976-01	1.5281-01	1.4591-01	1.3812-01	1.2916-01
1.500	2.1618-01	2.0490-01	1.8974-01	1.8412-01	1.7490-01	1.6644-01	1.5967-01	1.5289-01	1.4511-01	1.3603-01
1.750	2.1496-01	2.0461-01	1.9029-01	1.8526-01	1.7659-01	1.6858-01	1.6221-01	1.5575-01	1.4821-01	1.3929-01
2.000	2.0930-01	2.0016-01	1.8695-01	1.8260-01	1.7465-01	1.6726-01	1.6142-01	1.5542-01	1.4830-01	1.3971-01
3.000	1.6572-01	1.6115-01	1.5313-01	1.5155-01	1.4693-01	1.4251-01	1.3919-01	1.3552-01	1.3060-01	1.2434-01
4.000	1.1659-01	1.1532-01	1.1150-01	1.1180-01	1.0988-01	1.0794-01	1.0668-01	1.0504-01	1.0236-01	9.8370-02
5.000	7.6903-02	7.7373-02	7.6109-02	7.7321-02	7.7034-02	7.6642-02	7.6656-02	7.6329-02	7.5167-02	7.2959-02
6.000	4.8635-02	4.9835-02	4.9674-02	5.1337-02	5.1847-02	5.2243-02	5.2879-02	5.3245-02	5.2990-02	5.1947-02
7.000	2.9977-02	3.1206-02	3.1775-02	3.3138-02	3.3926-02	3.4622-02	3.5463-02	3.6111-02	3.6318-02	3.5959-02
8.000	1.8077-02	1.9142-02	1.9830-02	2.0954-02	2.1746-02	2.2477-02	2.3298-02	2.3991-02	2.4384-02	2.4384-02
9.000	0.0000	1.1558-02	1.2183-02	1.3043-02	1.3721-02	1.4364-02	1.5067-02	1.5689-02	1.6115-02	1.6277-02
10.000	0.0000	0.0000	0.0000	8.0183-03	8.5510-03	9.0657-03	9.6237-03	1.0134-02	1.0519-02	1.0731-02
11.000	0.0000	0.0000	0.0000	0.0000	0.0000	5.6647-03	6.0854-03	6.4800-03	6.7977-03	7.0036-03
12.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	4.1094-03	4.3565-03	4.5333-03
13.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	2.9139-03
14.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
19.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

A-57

SECONDARY NEUTRON ENERGY (MEV)	INCIDENT NEUTRON ENERGY (MEV) 14.000	14.500	15.000	15.500	16.000	16.500	17.000	17.500	18.000	18.500
.010	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
.050	8.9287-03	8.1692-03	7.5575-03	7.1024-03	6.7213-03	6.3309-03	5.9001-03	5.4322-03	4.9906-03	4.6022-03
.100	1.7406-02	1.5932-02	1.4745-02	1.3863-02	1.3124-02	1.2366-02	1.1529-02	1.0618-02	9.7581-03	9.0014-03
.200	3.3072-02	3.0299-02	2.8066-02	2.6408-02	2.5020-02	2.3592-02	2.2010-02	2.0285-02	1.8654-02	1.7218-02
.300	4.7129-02	4.3216-02	4.0065-02	3.7728-02	3.5772-02	3.3756-02	3.1514-02	2.9064-02	2.6744-02	2.4700-02
.400	5.9699-02	5.4791-02	5.0839-02	4.7912-02	4.5464-02	4.2933-02	4.0109-02	3.7015-02	3.4082-02	3.1497-02
.500	7.0895-02	6.5125-02	6.0479-02	5.7043-02	5.4169-02	5.1191-02	4.7857-02	4.4196-02	4.0720-02	3.7655-02
.750	9.3552-02	8.6130-02	8.0154-02	7.5753-02	7.2075-02	6.8237-02	6.3905-02	5.9114-02	5.4552-02	5.0524-02
1.000	1.0973-01	1.0125-01	9.4426-02	8.9423-02	8.5244-02	8.0853-02	7.5853-02	7.0284-02	6.4964-02	6.0259-02
1.250	1.2067-01	1.1159-01	1.0429-01	9.8962-02	9.4518-02	8.9813-02	8.4407-02	7.8341-02	7.2527-02	6.7378-02
1.500	1.2739-01	1.1807-01	1.1058-01	1.0514-01	1.0061-01	9.5776-02	9.0168-02	8.3828-02	7.7732-02	7.2325-02
1.750	1.3074-01	1.2145-01	1.1398-01	1.0860-01	1.0412-01	9.9298-02	9.3648-02	8.7209-02	8.0997-02	7.5478-02
2.000	1.3145-01	1.2238-01	1.1510-01	1.0988-01	1.0555-01	1.0085-01	9.5276-02	8.8874-02	8.2676-02	7.7161-02
3.000	1.1810-01	1.1093-01	1.0522-01	1.0126-01	9.8021-02	9.4342-02	8.9755-02	8.4286-02	7.8912-02	7.4103-02
4.000	9.4312-02	8.9382-02	8.5501-02	8.2949-02	8.0914-02	7.8450-02	7.5159-02	7.1054-02	6.6951-02	6.3259-02
5.000	7.0610-02	6.7518-02	6.5156-02	6.3703-02	6.2618-02	6.1157-02	5.9003-02	5.6155-02	5.3253-02	5.0627-02
6.000	5.0750-02	4.8962-02	4.7636-02	4.6965-02	4.6521-02	4.5769-02	4.4467-02	4.2605-02	4.0665-02	3.8696-02
7.000	3.5463-02	3.4520-02	3.3870-02	3.3663-02	3.3602-02	3.3302-02	3.2582-02	3.1426-02	3.0187-02	2.9054-02
8.000	2.4275-02	2.3841-02	2.3591-02	2.3436-02	2.3775-02	2.3736-02	2.3385-02	2.2708-02	2.1953-02	2.1259-02
9.000	1.6357-02	1.6208-02	1.6175-02	1.6337-02	1.6559-02	1.6653-02	1.6523-02	1.6152-02	1.5715-02	1.5312-02
10.000	1.0885-02	1.0883-02	1.0953-02	1.1152-02	1.1391-02	1.1540-02	1.1530-02	1.1347-02	1.1111-02	1.0893-02
11.000	7.1717-03	7.2345-03	7.3429-03	7.5368-03	7.7575-03	7.9167-03	7.9653-03	7.8914-03	7.7771-03	7.6715-03
12.000	4.6859-03	4.7693-03	4.8819-03	5.0514-03	5.2393-03	5.3861-03	5.4572-03	5.4429-03	5.3986-03	5.3582-03
13.000	3.0405-03	3.1223-03	3.2232-03	3.3621-03	3.5140-03	3.6390-03	3.7129-03	3.7281-03	3.7215-03	3.7164-03
14.000	0.0000	2.0320-03	2.1155-03	2.2245-03	2.3429-03	2.4441-03	2.5112-03	2.5384-03	2.5502-03	2.5625-03
15.000	0.0000	0.0000	0.0000	1.4643-03	1.5541-03	1.6331-03	1.6898-03	1.7195-03	1.7387-03	1.7578-03
16.000	0.0000	0.0000	0.0000	0.0000	0.0000	1.0664-03	1.1320-03	1.1597-03	1.1801-03	1.2004-03
17.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	7.7903-04	7.9786-04	8.1661-04
18.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	5.5359-04
19.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

EMERGY DISTRIBUTION OF SECONDARY NEUTRONS -INELASTIC CONTINUUM-   (BARNS PER MEV)

INCIDENT NEUTRON ENERGY (MEV)

SECONDARY NEUTRON ENERGY (MEV)	19.000	19.500	20.000
.010	0.0000	0.0000	0.0000
.050	4.2818-03	3.9686-03	3.6802-03
.100	8.3772-03	7.7667-03	7.2042-03
.200	1.6033-02	1.4873-02	1.3904-02
.300	2.3015-02	2.1362-02	1.9836-02
.400	2.9965-02	2.7272-02	2.5338-02
.500	3.5126-02	3.2641-02	3.0343-02
.750	4.7201-02	4.3923-02	4.0887-02
1.000	5.6379-02	5.2538-02	4.8974-02
1.250	6.3133-02	5.8916-02	5.4993-02
1.500	6.7868-02	6.3425-02	5.9283-02
1.750	7.0932-02	6.6382-02	6.2132-02
2.000	7.2621-02	6.8059-02	6.3788-02
3.000	7.0156-02	6.6123-02	6.2314-02
4.000	6.0244-02	5.7104-02	5.4109-02
5.000	4.8499-02	4.6234-02	4.4049-02
6.000	3.7483-02	3.5935-02	3.4424-02
7.000	2.8164-02	2.7154-02	2.6155-02
8.000	2.0730-02	2.0101-02	1.9467-02
9.000	1.5019-02	1.4647-02	1.4263-02
10.000	1.0748-02	1.0541-02	1.0321-02
11.000	7.8143-03	7.5101-03	7.3936-03
12.000	5.3497-03	5.3065-03	5.2528-03
13.000	3.7325-03	3.7235-03	3.7060-03
14.000	2.5888-03	2.5972-03	2.5992-03
15.000	1.7864-03	1.8024-03	1.8137-03
16.000	1.2272-03	1.2453-03	1.2599-03
17.000	8.3976-04	8.5697-04	8.7179-04
18.000	5.7265-04	5.3771-04	6.0115-04
19.000	0.0000	4.0181-04	4.1325-04
20.000	0.0000	0.0000	0.0000

ENERGY DISTRIBUTION OF SECONDARY NEUTRONS   -   N,2N NEUTRONS   -   (BARNS PER MEV)

INCIDENT NEUTRON ENERGY (MEV)

SECONDARY NEUTRON ENERGY (MEV)	13.500	14.000	14.500	15.000	15.500	16.000	16.500	17.000	17.500	18.000
.010	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
.050	3.0746-04	7.9135-04	1.4617-03	2.2196-03	2.8663-03	3.4736-03	3.9607-03	4.3379-03	4.6544-03	4.9150-03
.100	5.8579-04	1.5040-03	2.8185-03	4.2258-03	5.4613-03	6.6234-03	7.5577-03	8.2834-03	8.8936-03	9.3975-03
.200	1.0524-03	2.7162-03	5.0493-03	7.6562-03	9.9133-03	1.2041-02	1.3760-02	1.5102-02	1.6236-02	1.7178-02
.300	1.4228-03	3.6791-03	6.9193-03	1.0409-02	1.3496-02	1.6418-02	1.8788-02	2.0649-02	2.2230-02	2.3549-02
.400	1.7098-03	4.4297-03	8.3456-03	1.2576-02	1.6331-02	1.9897-02	2.2804-02	2.5098-02	2.7055-02	2.8697-02
.500	1.9264-03	5.0601-03	9.4369-03	1.4244-02	1.6528-02	2.2608-02	2.5948-02	2.8598-02	3.0869-02	3.2705-02
.750	2.2285-03	5.6116-03	1.1017-02	1.6700-02	2.1809-02	2.6714-02	3.0772-02	3.4033-02	3.6858-02	3.9271-02
1.000	2.2917-03	6.0642-03	1.1433-02	1.7404-02	2.2819-02	2.8058-02	3.2438-02	3.6001-02	3.9113-02	4.1813-02
1.250	2.0642-03	5.8156-03	1.0389-02	1.7003-02	2.2384-02	2.7627-02	3.2057-02	3.5702-02	3.8924-02	4.1730-02
1.500	2.0447-03	5.4075-03	9.4332-03	1.5947-02	2.1078-02	2.6116-02	3.0414-02	3.3990-02	3.7181-02	3.9996-02
1.750	1.8596-03	4.8085-03	8.3908-03	1.4542-02	1.9297-02	2.4001-02	2.8053-02	3.1461-02	3.4529-02	3.7262-02
2.000	1.6216-03	4.3290-03	7.4332-03	1.2990-02	1.7307-02	2.1607-02	2.5347-02	2.8526-02	3.1412-02	3.4007-02
3.000	6.6663-04	2.3409-03	4.3908-03	7.2713-03	9.8445-03	1.2480-02	1.4855-02	1.6952-02	1.8918-02	2.0744-02
4.000	4.0600-04	1.1252-03	2.2597-03	3.6181-03	4.9776-03	6.4072-03	7.7385-03	8.9548-03	1.0127-02	1.1247-02
5.000	1.7956-04	5.0703-04	1.0365-03	1.6878-03	2.3595-03	3.0839-03	3.7793-03	4.4347-03	5.0826-03	5.7172-03
6.000	7.6636-05	2.1934-04	4.5641-04	5.5582-04	1.0737-03	1.4249-03	1.7719-03	2.1083-03	2.4407-03	2.7899-03
7.000	3.1468-05	9.2250-05	1.9539-04	3.2907-04	4.7503-04	6.4013-04	8.0768-04	9.7449-04	1.1470-03	1.3236-03
8.000	1.2724-05	3.8067-05	8.1943-05	1.4035-04	2.0587-04	2.8169-04	3.6064-04	4.4123-04	5.2631-04	6.1514-04
9.000	5.0648-06	1.5414-05	3.3820-05	5.8924-05	8.7829-05	1.2202-04	1.5852-04	1.9666-04	2.3773-04	2.8142-04
10.000	1.9911-06	6.1741-06	1.3792-05	2.4433-05	3.7007-05	5.2207-05	6.8815-05	8.6570-05	1.0605-04	1.2715-04
11.000	7.7491-07	2.4463-06	5.5672-06	1.0030-05	1.5437-05	2.2112-05	2.9575-05	3.7727-05	4.6837-05	5.6876-05
12.000	2.9910-07	9.6285-07	2.2286-06	4.0833-06	6.3061-06	9.2885-06	1.2605-05	1.6306-05	2.0514-05	2.5232-05
13.000	1.1464-07	3.7603-07	8.8595-07	1.6508-06	2.6235-06	3.8746-06	5.3354-06	6.9983-06	8.9228-06	1.1116-05
14.000	0.0000	1.4598-07	3.5011-07	6.6345-07	1.0714-06	1.6067-06	2.2449-06	2.9859-06	3.8580-06	4.8680-06
15.000	0.0000	0.0000	0.0000	2.3528-07	4.3532-07	6.6285-07	9.3975-07	1.2674-06	1.6596-06	2.1210-06
16.000	0.0000	0.0000	0.0000	0.0000	0.0000	2.7225-07	3.9164-07	5.3562-07	7.1076-07	9.2002-07
17.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	2.2546-07	3.0320-07	3.9751-07
18.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1.7116-07
19.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

ENERGY DISTRIBUTION OF SECONDARY NEUTRONS - N,2N NEUTRONS - (BARNS PER MEV)

INCIDENT NEUTRON ENERGY (MEV)

SECONDARY NEUTRON ENERGY (MEV)	18.500	19.000	19.500	20.000
.010	0.0000	0.0000	0.0000	0.0000
.050	5.0865-03	5.2125-03	5.3322-03	5.5160-03
.100	9.7314-03	9.9784-03	1.0213-02	1.0571-02
.200	1.7810-02	1.8283-02	1.8735-02	1.9412-02
.300	2.4450-02	2.5125-02	2.5775-02	2.6736-02
.400	2.9626-02	3.0691-02	3.1520-02	3.2731-02
.500	3.4116-02	3.5147-02	3.6138-02	3.7566-02
.750	4.0991-02	4.2354-02	4.3671-02	4.5520-02
1.000	4.3772-02	4.5367-02	4.6910-02	4.9030-02
1.250	4.3834-02	4.5558-02	4.7240-02	4.9510-02
1.500	4.2133-02	4.3919-02	4.5670-02	4.7995-02
1.750	3.9574-02	4.1164-02	4.2926-02	4.5233-02
2.000	3.6044-02	3.7794-02	3.9523-02	4.1761-02
3.000	2.2257-02	2.3613-02	2.4974-02	2.6677-02
4.000	1.2216-02	1.3114-02	1.4028-02	1.5148-02
5.000	6.2863-03	6.8281-03	7.3868-03	8.0639-03
6.000	3.1054-03	3.4129-03	3.7341-03	4.1210-03
7.000	1.4914-03	1.6585-03	1.8352-03	2.0475-03
8.000	7.0168-04	7.8951-04	8.8356-04	9.9654-04
9.000	3.2496-04	3.6996-04	4.1874-04	4.7745-04
10.000	1.4864-04	1.7122-04	1.9600-04	2.2592-04
11.000	6.7308-05	7.8451-05	9.0825-05	1.0583-04
12.000	3.0227-05	3.5648-05	4.1739-05	4.9169-05
13.000	1.3480-05	1.6086-05	1.9049-05	2.2685-05
14.000	5.9762-06	7.2156-06	8.6418-06	1.0404-05
15.000	2.6359-06	3.2202-06	3.9005-06	4.7472-06
16.000	1.1574-06	1.4307-06	1.7527-06	2.1565-06
17.000	5.0625-07	6.3319-07	7.8449-07	9.7578-07
18.000	2.2066-07	2.7926-07	3.4992-07	4.4000-07
19.000	0.0000	1.2278-07	1.5560-07	1.9779-07
20.000	0.0000	0.0000	0.0000	0.0000

ENERGY DISTRIBUTION OF SECONDARY NEUTRONS -N,N ALPHA NEUTRONS-   (BARNS PER MEV)

SECONDARY NEUTRON ENERGY (MEV)	\	\	\	INCIDENT NEUTRON ENERGY (MEV)	\	\	\	\	\
	11.250	11.500	11.750	12.000	12.500	13.000	13.500	14.000	14.500	15.000
.010	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
.050	6.1190-05	1.1979-04	1.1731-04	1.7240-04	2.7615-04	3.7213-04	4.6119-04	4.9460-04	6.2135-04	7.3987-04
.100	1.1561-04	2.2047-04	2.2192-04	3.2632-04	5.2328-04	7.0589-04	8.7569-04	9.4000-04	1.1629-03	1.4086-03
.200	2.0634-04	4.0472-04	3.9706-04	5.8455-04	9.3945-04	1.2699-03	1.5785-03	1.6976-03	2.1384-03	2.5527-03
.300	2.7022-04	5.4245-04	5.3283-04	7.8533-04	1.2649-03	1.7135-03	2.1342-03	2.2995-03	2.9016-03	3.4697-03
.400	3.2667-04	6.4626-04	6.3556-04	9.3784-04	1.5140-03	2.0552-03	2.5647-03	2.7606-03	3.4998-03	4.1920-03
.500	3.6064-04	7.2182-04	7.1072-04	1.0500-03	1.6988-03	2.3109-03	2.8895-03	3.1250-03	3.9574-03	4.7481-03
.750	4.1377-04	9.1714-04	8.0701-04	1.1957-03	1.9453-03	2.6602-03	3.3420-03	3.6322-03	4.6201-03	5.5667-03
1.000	4.1507-04	8.2226-04	8.1451-04	1.2103-03	1.9801-03	2.7220-03	3.4375-03	3.7526-03	4.7945-03	5.8012-03
1.250	3.9036-04	7.7571-04	7.7071-04	1.1486-03	1.8896-03	2.6113-03	3.3140-03	3.6347-03	4.6645-03	5.6677-03
1.500	3.5243-04	7.0251-04	7.0010-04	1.0464-03	1.7311-03	2.4048-03	3.0670-03	3.3797-03	4.3565-03	5.3158-03
1.750	3.0934-04	6.1356-04	6.1828-04	9.2682-04	1.5418-03	2.1531-03	2.7597-03	3.0553-03	3.9559-03	4.8473-03
2.000	2.6599-04	5.3352-04	5.3489-04	8.0415-04	1.3452-03	1.8884-03	2.4325-03	2.7056-03	3.5187-03	4.3299-03
3.000	1.2784-04	2.5962-04	2.6344-04	4.0071-04	6.8542-04	9.8258-04	1.2909-03	1.4631-03	1.9368-03	2.4258-03
4.000	5.4613-05	1.1230-04	1.1533-04	1.7749-04	3.1043-04	4.5444-04	6.0900-04	7.0324-04	9.4761-04	1.2060-03
5.000	2.1873-05	4.5541-05	4.7538-05	7.3701-05	1.3181-04	1.9705-04	2.6934-04	3.1689-04	4.3466-04	5.6259-04
6.000	8.4099-06	1.7729-05	1.8652-05	2.9380-05	5.3727-05	8.2021-05	1.1435-04	1.3709-04	1.9140-04	2.5194-04
7.000	3.1437-06	6.7103-06	7.1450-06	1.1387-05	2.1292-05	3.3195-05	4.7203-05	5.7656-05	8.1940-05	1.0969-04
8.000	1.1512-06	2.4679-06	2.6812-06	4.3231-06	8.2655-06	1.3159-05	1.9087-05	2.3754-05	3.4363-05	4.6783-05
9.000	4.1495-07	9.0802-07	9.9041-07	1.6156-06	3.1586-06	5.1350-06	7.5972-06	9.6337-06	1.4186-05	1.9641-05
10.000	1.4772-07	3.2731-07	3.6133-07	5.9635-07	1.1921-06	1.9721-06	2.9866-06	3.8588-06	5.7839-06	8.1443-06
11.000	5.2065-08	1.1680-07	1.3051-07	2.1792-07	4.4543-07	7.5516-07	1.1624-06	1.5302-06	2.3346-06	3.3433-06
12.000	0.0000	0.0000	0.0000	7.8973-08	1.6506-07	2.8576-07	4.4865-07	6.0178-07	9.3458-07	1.3611-06
13.000	0.0000	0.0000	0.0000	0.0000	0.0000	1.0738-07	1.7196-07	2.3502-07	3.7153-07	5.5027-07
14.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	9.1240-08	1.4682-07	2.2115-07
15.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	8.6425-08
16.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
19.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

A-82

ENERGY DISTRIBUTION OF SECONDARY NEUTRONS   -N,N ALPHA NEUTRONS-   (BARNS PER MEV)

INCIDENT NEUTRON ENERGY (MEV)

SECONDARY NEUTRON ENERGY (MEV)	15.500	16.000	16.500	17.000	17.500	18.000	18.500	19.000	19.500	20.000
.010	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
.050	8.9572-04	9.5523-04	1.0534-03	1.1868-03	1.2332-03	1.3158-03	1.3941-03	1.4683-03	1.5746-03	1.6408-03
.100	1.7067-03	1.8214-03	2.0100-03	2.2662-03	2.3564-03	2.5159-03	2.6671-03	2.8108-03	3.0160-03	3.1445-03
.200	3.0979-03	3.3113-03	3.6595-03	4.1316-03	4.3018-03	4.5988-03	4.8812-03	5.1502-03	5.5325-03	5.7745-03
.300	4.2174-03	4.5148-03	4.9968-03	5.6494-03	5.8899-03	6.3046-03	6.7000-03	7.0775-03	7.6114-03	7.9530-03
.400	5.1036-03	5.4718-03	6.0648-03	6.8664-03	7.1683-03	7.6827-03	8.1746-03	8.6454-03	9.3081-03	9.7364-03
.500	5.7699-03	6.2172-03	6.9010-03	7.8240-03	8.1789-03	8.7770-03	9.3504-03	9.9006-03	1.0671-02	1.1175-02
.750	6.0153-03	7.3462-03	8.1640-03	9.3109-03	9.7658-03	1.0513-02	1.1235-02	1.1931-02	1.2896-02	1.3541-02
1.000	7.1309-03	7.7158-03	8.6271-03	9.8493-03	1.0365-02	1.1194-02	1.1999-02	1.2779-02	1.3853-02	1.4565-02
1.250	6.9949-03	7.5975-03	8.5258-03	9.7676-03	1.0313-02	1.1174-02	1.2014-02	1.2833-02	1.3950-02	1.4728-02
1.500	6.5669-03	7.1618-03	8.0887-03	9.2991-03	9.8514-03	1.0708-02	1.1548-02	1.2372-02	1.3487-02	1.4277-02
1.750	6.0305-03	6.6103-03	7.4609-03	8.6072-03	9.1408-03	9.9758-03	1.0791-02	1.1595-02	1.2676-02	1.3455-02
2.000	5.4083-03	5.9420-03	6.7413-03	7.8042-03	8.3229-03	9.1043-03	9.8707-03	1.0646-02	1.1671-02	1.2423-02
3.000	3.0764-03	3.4320-03	3.9508-03	4.6378-03	5.0124-03	5.5534-03	6.1001-03	6.6516-03	7.3750-03	7.9356-03
4.000	1.5555-03	1.7620-03	2.0581-03	2.4499-03	2.6833-03	3.0111-03	3.3482-03	3.6941-03	4.1424-03	4.5061-03
5.000	7.3734-04	8.4807-04	1.0051-03	1.2133-03	1.3467-03	1.5306-03	1.7229-03	1.9234-03	2.1813-03	2.3987-03
6.000	3.3553-04	3.9186-04	4.7125-04	5.7681-04	6.4881-04	7.4690-04	8.5111-04	9.6138-04	1.1027-03	1.2259-03
7.000	1.4845-04	1.7603-04	2.1481-04	2.6661-04	3.0391-04	3.5435-04	4.0877-04	4.6719-04	5.4195-04	6.0907-04
8.000	6.4335-05	7.7466-05	9.5916-05	1.2071-04	1.3945-04	1.6468-04	1.9231-04	2.2240-04	2.6092-04	2.9644-04
9.000	2.7447-05	3.3557-05	4.2159-05	5.3803-05	6.2987-05	7.5340-05	8.9064-05	1.0421-04	1.2365-04	1.4202-04
10.000	1.1565-05	1.4357-05	1.8302-05	2.3684-05	2.8099-05	3.4041-05	4.0738-05	4.8232-05	5.7879-05	6.7205-05
11.000	4.8241-06	6.0809-06	7.8657-06	1.0322-05	1.2410-05	1.5227-05	1.8447-05	2.2099-05	2.6821-05	3.1483-05
12.000	1.9957-06	2.5543-06	3.3525-06	4.4610-06	5.4354-06	6.7552-06	8.2844-06	1.0042-05	1.2326-05	1.4626-05
13.000	8.1986-07	1.0655-06	1.4190-06	1.9146-06	2.3642-06	2.9759-06	3.6946-06	4.5312-06	5.6251-06	6.7480-06
14.000	3.3482-07	4.4184-07	5.9705-07	8.1689-07	1.0222-06	1.3033-06	1.6379-06	2.0326-06	2.5519-06	3.0948-06
15.000	1.3604-07	1.8228-07	2.4993-07	3.4675-07	4.3973-07	5.6783-07	7.2243-07	9.071-07	1.1518-06	1.4121-06
16.000	0.0000	7.4368-08	1.0416-07	1.4654-07	1.8832-07	2.4630-07	3.1722-07	4.036 -07	5.1757-07	6.4148-07
17.000	0.0000	0.0000	0.0000	6.1684-08	8.0335-08	1.0642-07	1.3875-07	1.7036-07	2.3166-07	2.9026-07
18.000	0.0000	0.0000	0.0000	0.0000	0.0000	4.5822-08	6.0478-08	7.8664-08	1.0333-07	1.3089-07
19.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	3.4586-08	4.5948-08	5.8637-08
20.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

A-63

ENERGY DISTRIBUTION OF SECONDARY NEUTRONS -N,N PROTON NEUTRONS-   (PARNS PER MEV)

SECONDARY NEUTRON ENERGY (MEV)	INCIDENT NEUTRON ENERGY (MEV)									
	9.350	9.500	10.000	10.500	11.000	11.500	12.000	12.500	13.000	13.500
.010	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
.050	7.3224-05	7.2103-05	2.4011-04	5.2345-04	8.7557-04	1.1380-03	1.4942-03	1.8226-03	2.4454-03	2.9721-03
.100	1.3759-04	1.3555-04	4.5210-04	9.8701-04	1.6532-03	2.1515-03	2.8201-03	3.4201-03	4.6387-03	5.6433-03
.200	2.4288-04	2.3951-04	8.0137-04	1.7546-03	2.9469-03	3.8449-03	5.0661-03	6.2003-03	8.3454-03	1.0173-02
.300	3.2156-04	3.1742-04	1.0654-03	2.3394-03	3.9398-03	5.1533-03	6.8062-03	8.3406-03	1.1260-02	1.3753-02
.400	3.7842-04	3.7392-04	1.2589-03	2.7726-03	4.6819-03	6.1395-03	8.1280-03	9.9922-03	1.3505-02	1.6528-02
.500	4.1751-04	4.1295-04	1.3947-03	3.0806-03	5.2161-03	6.8573-03	9.0998-03	1.1212-02	1.5186-02	1.8621-02
.750	4.5836-04	4.5448-04	1.5471-03	3.4420-03	5.8676-03	7.7628-03	1.0363-02	1.2039-02	1.7481-02	2.1543-02
1.000	4.4730-04	4.4461-04	1.5254-03	3.4185-03	5.8672-03	7.8115-03	1.0490-02	1.3069-02	1.7888-02	2.2153-02
1.250	4.0922-04	4.0777-04	1.4100-03	3.1830-03	5.5001-03	7.3692-03	9.9545-03	1.2471-02	1.7160-02	2.1957-02
1.500	3.5941-04	3.5902-04	1.2512-03	2.8452-03	4.9497-03	6.6739-03	9.0689-03	1.1425-02	1.5003-02	1.9765-02
1.750	3.0689-04	3.0732-04	1.0795-03	2.4725-03	4.3307-03	5.8763-03	8.0325-03	1.0176-02	1.4149-02	1.7785-02
2.000	2.5670-04	2.5770-04	9.1228-04	2.1049-03	3.7117-03	5.0604-03	6.9693-03	8.0785-03	1.2410-02	1.5676-02
3.000	1.1049-04	1.1202-04	4.0920-04	9.7200-04	1.7611-03	2.4664-03	3.4720-03	4.5238-03	6.4567-03	8.3194-03
4.000	4.2273-05	4.3285-05	1.6315-04	3.9899-04	7.4275-04	1.0669-03	1.5362-03	2.0488-03	2.9863-03	3.9247-03
5.000	1.5162-05	1.5680-05	6.0985-05	1.5354-04	2.9368-04	4.3264-04	6.3075-04	8.6703-04	1.2949-03	1.7357-03
6.000	5.2210-06	5.4529-06	2.1884-05	5.6723-05	1.1147-04	1.6843-04	2.5463-04	3.5460-04	5.3899-04	7.3694-04
7.000	1.7478-06	1.8436-06	7.6347-06	2.0373-05	4.1137-05	6.3748-05	9.8606-05	1.4052-04	2.1812-04	3.0419-04
8.000	5.7319-07	6.1061-07	2.6092-06	7.1682-06	1.4871-05	2.3635-05	3.7467-05	5.4552-05	0.6471-05	1.2300-04
9.000	1.8503-07	1.9907-07	8.7775-07	2.4826-06	5.2919-06	8.6262-06	1.4002-05	2.0846-05	3.3744-05	4.8960-05
10.000	0.0000	0.0000	2.9164-07	8.4923-07	1.8599-06	3.1094-06	5.1684-06	7.8679-06	1.3006-05	1.9247-05
11.000	0.0000	0.0000	0.0000	0.0000	6.4714-07	1.1096-06	1.0886-06	2.9398-06	4.9625-06	7.4908-06
12.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	6.8444-07	1.0094-06	1.8779-06	2.8913-06
13.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	7.0567-07	1.1082-06
14.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
19.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

ENERGY DISTRIBUTION OF SECONDARY NEUTRONS -N,N PROTON NEUTRONS- (BARNS PER MEV)

INCIDENT NEUTRON ENERGY (MEV)

SECONDARY NEUTRON ENERGY (MEV)	14.000	14.500	15.000	15.500	16.000	16.500	17.000	17.500	18.000	18.500
.010	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
.050	3.5011-03	4.2539-03	4.9941-03	5.6878-03	6.2959-03	6.0250-03	7.4091-03	6.0756-03	6.4755-03	6.7412-03
.100	6.7680-03	8.0918-03	9.5080-03	1.0837-02	1.2005-02	1.3025-02	1.4300-02	1.5431-02	1.6205-02	1.6724-02
.200	1.2223-02	1.4640-02	1.7231-02	1.9672-02	2.1824-02	2.3713-02	2.6072-02	2.8170-02	2.9631-02	3.0607-02
.300	1.6556-02	1.9865-02	2.3420-02	2.6781-02	2.9757-02	3.2379-02	3.5649-02	3.8569-02	4.0609-02	4.2011-02
.400	1.9934-02	2.3960-02	2.8296-02	3.2408-02	3.6664-02	3.9300-02	4.3329-02	4.6941-02	4.9406-02	5.1257-02
.500	2.2500-02	2.7093-02	3.2050-02	3.6766-02	4.0977-02	4.4718-02	4.9372-02	5.3559-02	5.6535-02	5.8630-02
.750	2.6152-02	3.1630-02	3.7575-02	4.3277-02	4.8418-02	5.3032-02	5.8755-02	6.3950-02	6.7719-02	7.0444-02
1.000	2.7019-02	3.2824-02	3.9158-02	4.5281-02	5.0954-02	5.5904-02	6.2152-02	6.7073-02	7.2103-02	7.5235-02
1.250	2.6170-02	3.1934-02	3.8257-02	4.4417-02	5.0075-02	5.5247-02	6.1637-02	6.7535-02	7.1973-02	7.5329-02
1.500	2.4334-02	2.9626-02	3.5802-02	4.1827-02	4.7335-02	5.2415-02	5.8601-02	6.4511-02	6.0970-02	7.2407-02
1.750	2.1998-02	2.7082-02	3.2719-02	3.8293-02	4.3502-02	4.8346-02	5.4315-02	5.9910-02	6.4256-02	6.7664-02
2.000	1.9481-02	2.4090-02	2.9226-02	3.4343-02	3.9163-02	4.3683-02	4.9247-02	5.4502-02	5.0642-02	6.1942-02
3.000	1.0534-02	1.3260-02	1.6360-02	1.9535-02	2.2620-02	2.5601-02	2.9266-02	3.2023-02	3.5770-02	3.8249-02
4.000	5.0633-03	6.4475-03	8.1407-03	9.8774-03	1.1613-02	1.3336-02	1.5460-02	1.7571-02	1.9395-02	2.0594-02
5.000	2.2816-03	2.9757-03	3.7975-03	4.6821-03	5.5895-03	6.5133-03	7.6561-03	8.8184-03	9.0587-03	1.0803-02
6.000	9.8703-04	1.3103-03	1.7006-03	2.1306-03	2.5827-03	3.0537-03	3.6390-03	4.2487-03	4.8109-03	5.3367-03
7.000	4.1512-04	5.6097-04	7.4042-04	9.4263-04	1.1602-03	1.3919-03	1.6024-03	1.9901-03	2.2824-03	2.8631-03
8.000	1.7103-04	2.3526-04	3.1579-04	4.0853-04	5.1057-04	6.2153-04	7.6175-04	9.1318-04	1.0607-03	1.2058-03
9.000	6.9363-05	9.7118-05	1.3258-04	1.7429-04	2.2117-04	2.7319-04	3.3951-04	4.1247-04	4.8528-04	5.5845-04
10.000	2.7763-05	3.9597-05	5.4374-05	7.3436-05	9.4624-05	1.1860-04	1.4945-04	1.8400-04	2.1927-04	2.5544-04
11.000	1.1017-05	1.5983-05	2.2567-05	3.0633-05	4.0079-05	5.0969-05	6.5133-05	8.1264-05	9.0002-05	1.1567-04
12.000	4.3328-06	6.3983-06	9.1874-06	1.2672-05	1.6835-05	2.1724-05	2.8150-05	3.5593-05	4.3511-05	5.1946-05
13.000	1.6921-06	2.5435-06	3.7143-06	5.2061-06	7.0227-06	9.1951-06	1.2002-05	1.5401-05	1.9160-05	2.3166-05
14.000	6.5693-07	1.0051-06	1.4928-06	2.1261-06	2.9121-06	3.8689-06	5.1549-06	6.6939-06	8.3945-06	1.0270-05
15.000	0.0000	0.0000	5.9687-07	8.6384-07	1.2014-06	1.6196-06	2.1601-06	2.8795-06	3.6575-06	4.5298-06
16.000	0.0000	0.0000	0.0000	0.0000	4.9345-07	6.7496-07	9.2401-07	1.2332-06	1.6575-06	1.9891-06
17.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	3.0924-07	5.2607-07	6.0547-07	8.7000-07
18.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	2.9514-07	3.7921-07
19.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

ENERGY DISTRIBUTION OF SECONDARY NEUTRONS   -N,N PROTON NEUTRONS-   (BARNS PER MEV)

INCIDENT NEUTRON ENERGY (MEV)

SECONDARY NEUTRON ENERGY (MEV)	19.000	19.500	20.000
.010	0.0000	0.0000	0.0000
.050	8.8633-03	8.9825-03	9.0071-03
.100	1.7005-02	1.7205-02	1.7261-02
.200	3.1159-02	3.1560-02	3.1698-02
.300	4.2819-02	4.3420-02	4.3657-02
.400	5.2305-02	5.3098-02	5.3447-02
.500	5.9898-02	6.0876-02	6.1342-02
.750	7.2180-02	7.3566-02	7.4331-02
1.000	7.7316-02	7.9023-02	8.0062-02
1.250	7.7641-02	7.9580-02	8.0846-02
1.500	7.4648-02	7.6935-02	7.8371-02
1.750	7.0152-02	7.2311-02	7.3862-02
2.000	6.4409-02	6.6579-02	6.8192-02
3.000	4.0242-02	4.2071-02	4.3561-02
4.000	2.2249-02	2.3651-02	2.4735-02
5.000	1.1637-02	1.2443-02	1.3168-02
6.000	6.8164-03	6.2904-03	6.7292-03
7.000	2.8265-03	3.0916-03	3.3434-03
8.000	1.3455-03	1.4884-03	1.6273-03
9.000	6.3050-04	7.0539-04	7.7963-04
10.000	2.9180-04	3.3017-04	3.6891-04
11.000	1.3370-04	1.5300-04	1.7282-04
12.000	6.0752-05	7.0313-05	8.0289-05
13.000	2.7414-05	3.2089-05	3.7042-05
14.000	1.2297-05	1.4558-05	1.6999-05
15.000	5.4800-06	6.5706-06	7.7518-06
16.000	2.4383-06	2.9525-06	3.5213-06
17.000	1.0791-06	1.3215-06	1.5934-06
18.000	4.7592-07	5.8946-07	7.1848-07
19.000	2.0925-07	2.6211-07	3.2298-07
20.000	0.0000	0.0000	0.0000

EOF UNIT 5 AT INTERNAL SEQUENCE NUMBER   00115, LOCATION 014007

A-93

ENERGY DISTRIBUTION OF SECONDARY GAMMA RAYS -CONTINUOUS SPECTRUM-   (BARNS PER MEV)

| | INCIDENT NEUTRON ENERGY (MEV) | | | | | | |
SECONDARY GAMMA ENERGY (MEV)	9.000	10.000	12.000	14.000	16.000	18.000	20.000
.010	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
.100	2.9700-02	2.8200-02	2.5900-02	2.5000-02	2.1900-02	1.9400-02	1.6700-02
.200	6.4400-02	6.1200-02	5.6200-02	5.2000-02	4.7400-02	4.2100-02	3.6200-02
.400	1.2390-01	1.1770-01	1.0810-01	1.0000-01	9.1200-02	8.0900-02	6.9700-02
.600	1.7350-01	1.6480-01	1.5130-01	1.4000-01	1.2770-01	1.1320-01	9.7600-02
.800	2.1680-01	2.0600-01	1.8910-01	1.7500-01	1.5960-01	1.4160-01	1.2200-01
1.000	2.5160-01	2.3890-01	2.1940-01	2.0300-01	1.8510-01	1.6420-01	1.4150-01
1.200	2.8130-01	2.6720-01	2.4540-01	2.2700-01	2.0700-01	1.8360-01	1.5820-01
1.400	3.0360-01	2.8840-01	2.6480-01	2.4500-01	2.2340-01	1.9820-01	1.7070-01
1.600	3.1840-01	3.0250-01	2.7780-01	2.5700-01	2.3440-01	2.0790-01	1.7910-01
1.800	3.0850-01	2.9310-01	2.6920-01	2.4900-01	2.2710-01	2.0140-01	1.7360-01
2.000	2.6760-01	2.5420-01	2.3350-01	2.1600-01	1.9700-01	1.7470-01	1.5040-01
2.200	2.2430-01	2.1300-01	1.9570-01	1.8100-01	1.6510-01	1.4640-01	1.2610-01
2.400	1.8090-01	1.7180-01	1.5700-01	1.4600-01	1.3330-01	1.1810-01	1.0170-01
2.600	1.4120-01	1.3420-01	1.2320-01	1.1400-01	1.0400-01	9.2200-02	7.9500-02
2.800	1.1270-01	1.0120-01	9.8400-02	9.1000-02	8.3000-02	7.3600-02	6.3400-02
3.000	1.0660-01	1.0120-01	9.3000-02	8.6000-02	7.6400-02	6.9600-02	5.9900-02
3.500	9.9100-02	9.4200-02	8.6400-02	8.0000-02	7.3000-02	6.4700-02	5.5700-02
4.000	9.0400-02	8.5900-02	7.8910-02	7.3000-02	6.6500-02	5.9100-02	5.0900-02
5.000	6.8100-02	6.4700-02	5.9500-02	5.5000-02	5.0200-02	4.4400-02	3.8300-02
6.000	4.3400-02	4.2400-02	4.0000-02	3.8000-02	3.5600-02	3.3100-02	2.9300-02
7.000	1.1200-02	2.1200-02	2.3800-02	2.4000-02	2.4600-02	2.5000-02	2.3000-02
8.000	0.0000	7.1000-03	1.1900-02	1.4000-02	1.6400-02	1.7800-02	1.8100-02
9.000	0.0000	0.0000	3.2000-03	9.0000-03	1.0900-02	1.3700-02	1.3200-02
10.000	0.0000	0.0000	0.0000	4.0000-03	6.4000-03	9.7000-03	9.7000-03
12.000	0.0000	0.0000	0.0000	0.0000	5.0000-04	2.8000-03	5.2000-03
14.000	0.0000	0.0000	0.0000	0.0000	0.0000	2.0000-04	2.1000-03
16.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	5.0000-04
18.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

ANGULAR DISTRIBUTION OF ELASTICALLY SCATTERED NEUTRONS (RELATIVE VALUES)

INCIDENT NEUTRON ENERGY (MEV)

ANGLE (COS)	.040	.060	.080	.100	.120	.140	.160	.180	.200	.210
-1.000	5.0000-01	5.0231-01	5.0261-01	4.9890-01	4.9323-01	4.7877-01	4.5616-01	4.4517-01	3.2557-01	3.7540-01
-.950	5.0000-01	5.0091-01	4.9950-01	4.9576-01	4.8946-01	4.7562-01	4.5427-01	4.4339-01	3.4407-01	3.8488-01
-.900	5.0000-01	5.0007-01	4.9762-01	4.9261-01	4.8632-01	4.7311-01	4.5302-01	4.4245-01	3.6202-01	3.9484-01
-.850	5.0000-01	4.9944-01	4.9636-01	4.9073-01	4.8381-01	4.7185-01	4.5302-01	4.4286-01	3.8033-01	4.0576-01
-.800	5.0000-01	4.9801-01	4.9510-01	4.8947-01	4.8255-01	4.7060-01	4.5302-01	4.4349-01	3.9757-01	4.1653-01
-.750	5.0000-01	4.9777-01	4.9385-01	4.8822-01	4.8129-01	4.7060-01	4.5427-01	4.4538-01	4.1462-01	4.2766-01
-.700	5.0000-01	4.9777-01	4.9366-01	4.8759-01	4.8129-01	4.7123-01	4.5616-01	4.4800-01	4.3140-01	4.3912-01
-.650	5.0000-01	4.9735-01	4.9322-01	4.8759-01	4.8066-01	4.7185-01	4.5804-01	4.5072-01	4.4658-01	4.4985-01
-.600	5.0000-01	4.9735-01	4.9322-01	4.8822-01	4.8129-01	4.7311-01	4.6056-01	4.5407-01	4.6166-01	4.6072-01
-.550	5.0000-01	4.9714-01	4.9322-01	4.8822-01	4.8192-01	4.7437-01	4.6307-01	4.5753-01	4.7584-01	4.7131-01
-.500	5.0000-01	4.9693-01	4.9322-01	4.8804-01	4.8255-01	4.7562-01	4.6558-01	4.6098-01	4.8858-01	4.8101-01
-.450	5.0000-01	4.9672-01	4.9322-01	4.8947-01	4.8318-01	4.7751-01	4.6873-01	4.6496-01	5.0070-01	4.9028-01
-.400	5.0000-01	4.9714-01	4.9365-01	4.9010-01	4.8443-01	4.7939-01	4.7124-01	4.6821-01	5.1255-01	4.9968-01
-.350	5.0000-01	4.9693-01	4.9385-01	4.9073-01	4.8569-01	4.8128-01	4.7438-01	4.7219-01	5.2179-01	5.0716-01
-.300	5.0000-01	4.9735-01	4.9447-01	4.9136-01	4.8695-01	4.8316-01	4.7689-01	4.7533-01	5.3095-01	5.1461-01
-.250	5.0000-01	4.9693-01	4.9510-01	4.9261-01	4.8820-01	4.8505-01	4.8004-01	4.7931-01	5.3947-01	5.2164-01
-.200	5.0000-01	4.9735-01	4.9573-01	4.9324-01	4.8946-01	4.8693-01	4.8255-01	4.8235-01	5.4594-01	5.2715-01
-.150	5.0000-01	4.9756-01	4.9573-01	4.9450-01	4.9009-01	4.8817-01	4.8506-01	4.8559-01	5.5115-01	5.3160-01
-.100	5.0000-01	4.9735-01	4.9636-01	4.9513-01	4.9135-01	4.9008-01	4.8753-01	4.8852-01	5.5563-01	5.3561-01
-.050	5.0000-01	4.9777-01	4.9636-01	4.9576-01	4.9260-01	4.9133-01	4.9009-01	4.9167-01	5.5806-01	5.3858-01
0.000	5.0000-01	4.9819-01	4.9699-01	4.9638-01	4.9323-01	4.9322-01	4.9260-01	4.9449-01	5.6210-01	5.4154-01
.050	5.0000-01	4.9798-01	4.9699-01	4.9702-01	4.9449-01	4.9447-01	4.9449-01	4.9659-01	5.6201-01	5.4192-01
.100	5.0000-01	4.9840-01	4.9762-01	4.9765-01	4.9574-01	4.9573-01	4.9700-01	4.9963-01	5.6326-01	5.4339-01
.150	5.0000-01	4.9819-01	4.9762-01	4.9828-01	4.9637-01	4.9762-01	4.9880-01	5.0130-01	5.6120-01	5.4228-01
.200	5.0000-01	4.9801-01	4.9824-01	4.9890-01	4.9763-01	4.9887-01	5.0140-01	5.0423-01	5.6048-01	5.4226-01
.250	5.0000-01	4.9840-01	4.9824-01	4.9953-01	4.9884-01	5.0013-01	5.0391-01	5.0706-01	5.5707-01	5.4628-01
.300	5.0000-01	4.9832-01	4.9887-01	5.0016-01	5.0014-01	5.0201-01	5.0642-01	5.0947-01	5.5241-01	5.3726-01
.350	5.0000-01	4.9824-01	4.9952-01	5.0079-01	5.0140-01	5.0390-01	5.0957-01	5.1282-01	5.4836-01	5.4786-01
.400	5.0000-01	4.9944-01	5.0013-01	5.0205-01	5.0265-01	5.0641-01	5.1271-01	5.1596-01	5.4415-01	5.3262-01
.450	5.0000-01	4.9947-01	5.0076-01	5.0207-01	5.0454-01	5.0893-01	5.1648-01	5.1983-01	5.3804-01	5.2891-01
.500	5.0000-01	5.0070-01	5.0201-01	5.0393-01	5.0705-01	5.1144-01	5.2088-01	5.2476-01	5.3239-01	5.2598-01
.550	5.0000-01	5.0070-01	5.0264-01	5.0582-01	5.0957-01	5.1521-01	5.2527-01	5.2905-01	5.2530-01	5.2215-01
.600	5.0000-01	5.0154-01	5.0578-01	5.0707-01	5.1271-01	5.1961-01	5.3093-01	5.3491-01	5.1803-01	5.1868-01
.650	5.0000-01	5.0259-01	5.0578-01	5.0959-01	5.1648-01	5.2401-01	5.3721-01	5.4182-01	5.1192-01	5.1643-01
.700	5.0000-01	5.0363-01	5.0766-01	5.1210-01	5.2088-01	5.2966-01	5.4475-01	5.4999-01	5.0564-01	5.1455-01
.750	5.0000-01	5.0447-01	5.0955-01	5.1524-01	5.2590-01	5.3657-01	5.5355-01	5.5942-01	4.9846-01	5.1258-01
.800	5.0000-01	5.0573-01	5.1206-01	5.1901-01	5.3156-01	5.4474-01	5.6360-01	5.7021-01	4.9236-01	5.1201-01
.850	5.0000-01	5.0761-01	5.1520-01	5.2278-01	5.3847-01	5.5354-01	5.7491-01	5.8277-01	4.8715-01	5.1300-01
.900	5.0000-01	5.0908-01	5.1834-01	5.2781-01	5.4601-01	5.6422-01	5.8811-01	5.9722-01	4.8168-01	5.1452-01
.950	5.0000-01	5.1138-01	5.2274-01	5.3409-01	5.5543-01	5.7616-01	6.0319-01	6.1408-01	4.7773-01	5.1823-01
1.000	5.0000-01	5.1369-01	5.2714-01	5.4037-01	5.6549-01	5.8998-01	6.2015-01	6.3291-01	4.7405-01	5.2308-01

A-68

ANGULAR DISTRIBUTION OF ELASTICALLY SCATTERED NEUTRONS (RELATIVE VALUES)

INCIDENT NEUTRON ENERGY (MEV)

ANGLE (COS)	.220	.230	.240	.250	.260	.270	.280	.290	.300	.320
-1.000	4.5805-01	5.7364-01	3.9331-01	3.2043-01	4.9892-01	4.9702-01	4.5866-01	4.3062-01	4.1291-01	4.0847-01
-.950	4.5302-01	5.4851-01	3.8954-01	3.2064-01	4.4592-01	4.5304-01	4.4609-01	4.4337-01	4.4487-01	4.6656-01
-.900	4.4988-01	5.2715-01	3.8577-01	3.2064-01	4.0477-01	4.1911-01	4.3667-01	4.5368-01	4.7014-01	5.0140-01
-.850	4.4863-01	5.0893-01	3.8263-01	3.2137-01	3.7387-01	3.9397-01	4.3039-01	4.6256-01	4.9050-01	5.3366-01
-.800	4.4863-01	4.9385-01	3.8074-01	3.2346-01	3.5230-01	3.7638-01	4.2599-01	4.6076-01	5.0470-01	5.5607-01
-.750	4.4988-01	4.8128-01	3.7886-01	3.2535-01	3.3785-01	3.6507-01	4.2410-01	4.7440-01	5.1597-01	5.7289-01
-.700	4.5240-01	4.7123-01	3.7760-01	3.2776-01	3.3041-01	3.5941-01	4.2347-01	4.7775-01	5.2225-01	5.8190-01
-.650	4.5554-01	4.6369-01	3.7697-01	3.3059-01	3.2684-01	3.5878-01	4.2473-01	4.8043-01	5.2590-01	5.8609-01
-.600	4.5931-01	4.5740-01	3.7760-01	3.3509-01	3.3188-01	3.6192-01	4.2724-01	4.8233-01	5.2719-01	5.8623-01
-.550	4.6371-01	4.5301-01	3.7823-01	3.3917-01	3.3680-01	3.6821-01	4.3039-01	4.8283-01	5.2556-01	5.8183-01
-.500	4.6810-01	4.4987-01	3.8011-01	3.4483-01	3.4948-01	3.7764-01	4.3478-01	4.8304-01	5.2242-01	5.7450-01
-.450	4.7250-01	4.4736-01	3.8326-01	3.5205-01	3.6204-01	3.8832-01	4.3918-01	4.8223-01	5.1747-01	5.6451-01
-.400	4.7753-01	4.4610-01	3.8577-01	3.5802-01	3.7555-01	4.0026-01	4.4484-01	4.8265-01	5.1370-01	5.5551-01
-.350	4.8193-01	4.4610-01	3.8954-01	3.6514-01	3.9042-01	4.1282-01	4.4986-01	4.8142-01	5.0750-01	5.4322-01
-.300	4.8632-01	4.4610-01	3.9457-01	3.7404-01	4.0603-01	4.2602-01	4.5552-01	4.8082-01	5.0193-01	5.3156-01
-.250	4.9072-01	4.4673-01	4.0022-01	3.8336-01	4.2121-01	4.3859-01	4.6054-01	4.7958-01	4.9569-01	5.1913-01
-.200	4.9449-01	4.4798-01	4.0650-01	3.9321-01	4.3618-01	4.5115-01	4.6620-01	4.7945-01	4.9091-01	5.0845-01
-.150	4.9763-01	4.4924-01	4.1341-01	4.0378-01	4.5074-01	4.6309-01	4.7123-01	4.7870-01	4.8550-01	4.9713-01
-.100	5.0078-01	4.5113-01	4.2158-01	4.1562-01	4.6467-01	4.7440-01	4.7625-01	4.7843-01	4.8094-01	4.8694-01
-.050	5.0329-01	4.5501-01	4.3038-01	4.2808-01	4.7735-01	4.8445-01	4.8065-01	4.7805-01	4.7666-01	4.7752-01
.000	5.0580-01	4.5489-01	4.3980-01	4.4117-01	4.8844-01	4.9325-01	4.8505-01	4.7867-01	4.7411-01	4.7046-01
.050	5.0706-01	4.5740-01	4.5049-01	4.5541-01	4.9808-01	5.0079-01	4.8945-01	4.8029-01	4.7331-01	4.6592-01
.100	5.0894-01	4.5992-01	4.6242-01	4.7112-01	5.0656-01	5.0707-01	4.9322-01	4.8179-01	4.7281-01	4.6215-01
.150	5.0957-01	4.6306-01	4.7499-01	4.8724-01	5.1400-01	5.1273-01	4.9762-01	4.8492-01	4.7465-01	4.6138-01
.200	5.1063-01	4.6620-01	4.8818-01	5.0410-01	5.2101-01	5.1775-01	5.0139-01	4.8743-01	4.7591-01	4.6012-01
.250	5.1146-01	4.7060-01	5.0264-01	5.2191-01	5.2740-01	5.2215-01	5.0515-01	4.9046-01	4.7808-01	4.6026-01
.300	5.1146-01	4.7500-01	5.1772-01	5.4044-01	5.3274-01	5.2593-01	5.0955-01	4.9511-01	4.8261-01	4.6340-01
.350	5.1209-01	4.8002-01	5.3405-01	5.6033-01	5.3829-01	5.2970-01	5.1395-01	4.9978-01	4.8717-01	4.6668-01
.400	5.1334-01	4.8631-01	5.5164-01	5.8138-01	5.4458-01	5.3410-01	5.1897-01	5.0508-01	4.9241-01	4.7074-01
.450	5.1397-01	4.9322-01	5.7049-01	6.0400-01	5.5212-01	5.3975-01	5.2526-01	5.1163-01	4.9886-01	4.7590-01
.500	5.1586-01	5.0201-01	5.8997-01	6.2672-01	5.6113-01	5.4666-01	5.3217-01	5.1831-01	5.0510-01	4.8058-01
.550	5.1774-01	5.1207-01	6.1007-01	6.5006-01	5.7296-01	5.5609-01	5.4034-01	5.2527-01	5.1088-01	4.8413-01
.600	5.2088-01	5.2463-01	6.3209-01	6.7500-01	5.8699-01	5.6740-01	5.4976-01	5.3297-01	5.1703-01	4.8769-01
.650	5.2528-01	5.3846-01	6.5471-01	7.0089-01	6.0605-01	5.8310-01	5.6107-01	5.4055-01	5.2155-01	4.8811-01
.700	5.3094-01	5.5479-01	6.7858-01	7.2778-01	6.2939-01	6.0258-01	5.7426-01	5.4853-01	5.2537-01	4.8678-01
.750	5.3785-01	5.7427-01	7.0372-01	7.5562-01	6.5841-01	6.2709-01	5.8997-01	5.5701-01	5.2821-01	4.8208-01
.800	5.4664-01	5.9626-01	7.3011-01	7.8496-01	6.9442-01	6.5785-01	6.0882-01	5.6610-01	5.2972-01	4.7595-01
.850	5.5795-01	6.2202-01	7.5706-01	8.1436-01	7.3821-01	6.9555-01	6.3083-01	5.7533-01	5.2913-01	4.6457-01
.900	5.7115-01	6.5157-01	7.8596-01	8.4578-01	7.9162-01	7.4142-01	6.5596-01	5.8368-01	5.2464-01	4.4627-01
.950	5.8748-01	6.8550-01	8.1549-01	8.7738-01	8.5583-01	7.9677-01	6.8487-01	5.9128-01	5.1604-01	4.2057-01
1.000	6.0633-01	7.2382-01	8.4628-01	9.1018-01	9.3111-01	8.6212-01	7.1880-01	5.9986-01	5.0536-01	3.8957-01

ANGULAR DISTRIBUTION OF ELASTICALLY SCATTERED NEUTRONS (RELATIVE VALUES)

INCIDENT NEUTRON ENERGY (MEV)

ANGLE (COS)	.340	.360	.370	.380	.390	.400	.410	.420	.430	.440
-1.000	6.9423-01	6.3410-01	5.7808-01	4.8140-01	4.1401-01	3.7590-01	3.6708-01	4.4164-01	4.3730-01	4.2618-01
-.950	6.9272-01	6.3127-01	5.7368-01	4.7297-01	4.0459-01	3.6852-01	3.6478-01	4.5807-01	4.5426-01	4.3963-01
-.900	6.9065-01	6.2851-01	5.6991-01	4.6653-01	3.9768-01	3.6334-01	3.6353-01	4.7081-01	4.6746-01	4.5023-01
-.850	6.8807-01	6.2610-01	5.6740-01	4.6310-01	3.9453-01	3.6169-01	3.6457-01	4.8060-01	4.7751-01	4.5653-01
-.800	6.8374-01	6.2205-01	5.6488-01	4.6135-01	3.9391-01	3.6255-01	3.6730-01	4.8796-01	4.8505-01	4.6501-01
-.750	6.7770-01	6.1876-01	5.6237-01	4.6130-01	3.9579-01	3.6585-01	3.7148-01	4.9226-01	4.8945-01	4.6913-01
-.700	6.7035-01	6.1401-01	5.5986-01	4.6242-01	3.9956-01	3.7112-01	3.7714-01	4.9540-01	4.9259-01	4.7238-01
-.650	6.6225-01	6.0331-01	5.5734-01	4.6452-01	4.0459-01	3.7756-01	3.8342-01	4.9666-01	4.9385-01	4.7427-01
-.600	6.5326-01	5.9708-01	5.5483-01	4.6739-01	4.1087-01	3.8525-01	3.9054-01	4.9666-01	4.9385-01	4.7532-01
-.550	6.4290-01	5.9006-01	5.5232-01	4.7150-01	4.1904-01	3.9491-01	3.9913-01	4.9558-01	4.9259-01	4.7534-01
-.500	6.3165-01	5.8197-01	5.4918-01	4.7538-01	4.2720-01	4.0465-01	4.0771-01	4.9378-01	4.9070-01	4.7499-01
-.450	6.1802-01	5.7369-01	5.4541-01	4.7938-01	4.3600-01	4.1525-01	4.1713-01	4.9198-01	4.8882-01	4.7474-01
-.400	6.0569-01	5.6371-01	5.4164-01	4.8381-01	4.4542-01	4.2648-01	4.2698-01	4.8955-01	4.8631-01	4.7407-01
-.350	5.9036-01	5.5459-01	5.3661-01	4.8771-01	4.5485-01	4.3803-01	4.3724-01	4.8704-01	4.8379-01	4.7355-01
-.300	5.7617-01	5.4400-01	5.3221-01	4.9187-01	4.6427-01	4.4941-01	4.4729-01	4.8461-01	4.8128-01	4.7289-01
-.250	5.6032-01	5.3321-01	5.2656-01	4.9509-01	4.7307-01	4.6048-01	4.5735-01	4.8263-01	4.7939-01	4.7294-01
-.200	5.4404-01	5.2201-01	5.2089-01	4.9870-01	4.8249-01	4.7226-01	4.6802-01	4.8075-01	4.7751-01	4.7294-01
-.150	5.2764-01	5.0998-01	5.1461-01	5.0121-01	4.9065-01	4.8294-01	4.7807-01	4.7993-01	4.7388-01	4.7409-01
-.100	5.1020-01	4.9838-01	5.0770-01	5.0347-01	4.9882-01	4.9378-01	4.8834-01	4.7921-01	4.7625-01	4.7508-01
-.050	4.9369-01	4.8595-01	5.0079-01	5.0488-01	5.0573-01	5.0336-01	4.9776-01	4.7948-01	4.7688-01	4.7736-01
0.0	4.7614-01	4.7375-01	4.9325-01	5.0603-01	5.1265-01	5.1310-01	5.0740-01	4.7983-01	4.7751-01	4.7948-01
.050	4.5910-01	4.6198-01	4.8571-01	5.0673-01	5.1893-01	5.2229-01	5.1682-01	4.8135-01	4.7939-01	4.8271-01
.100	4.4299-01	4.5023-01	4.7817-01	5.0660-01	5.2395-01	5.3022-01	5.2541-01	4.8404-01	4.8254-01	4.8692-01
.150	4.2698-01	4.3869-01	4.7063-01	5.0644-01	5.2898-01	5.3823-01	5.3420-01	4.8727-01	4.8631-01	4.9180-01
.200	4.1139-01	4.2822-01	4.6309-01	5.0590-01	5.3337-01	5.4553-01	5.4237-01	4.9050-01	4.9008-01	4.9657-01
.250	3.9735-01	4.1777-01	4.5618-01	5.0516-01	5.3714-01	5.5213-01	5.5012-01	4.9499-01	4.9510-01	5.0230-01
.300	3.8342-01	4.0838-01	4.4927-01	5.0440-01	5.4091-01	5.5881-01	5.5808-01	5.0001-01	5.0076-01	5.0869-01
.350	3.7104-01	4.0092-01	4.4298-01	5.0351-01	5.4405-01	5.6462-01	5.6520-01	5.0494-01	5.0641-01	5.1513-01
.400	3.6136-01	3.9410-01	4.3796-01	5.0272-01	5.4657-01	5.6949-01	5.7148-01	5.1051-01	5.1269-01	5.2198-01
.450	3.5242-01	3.8875-01	4.3356-01	5.0259-01	5.4971-01	5.7491-01	5.7618-01	5.1607-01	5.1897-01	5.2894-01
.500	3.4515-01	3.8618-01	4.3042-01	5.0338-01	5.5348-01	5.8072-01	5.8509-01	5.2163-01	5.2526-01	5.3601-01
.550	3.4172-01	3.8486-01	4.2916-01	5.0456-01	5.5662-01	5.8535-01	5.9075-01	5.2710-01	5.3154-01	5.4312-01
.600	3.3955-01	3.8567-01	4.3105-01	5.0707-01	5.6102-01	5.9100-01	5.9703-01	5.3203-01	5.3719-01	5.4977-01
.650	3.3978-01	3.8965-01	4.3544-01	5.1121-01	5.6667-01	5.9744-01	6.0352-01	5.4129-01	5.4159-01	5.4628-01
.700	3.4397-01	3.9744-01	4.4298-01	5.1681-01	5.7296-01	6.0388-01	6.0959-01	5.3894-01	5.4536-01	5.6067-01
.750	3.5274-01	4.0716-01	4.5241-01	5.2458-01	5.8049-01	6.1071-01	6.1525-01	5.4028-01	5.4725-01	5.6440-01
.800	3.6360-01	4.2106-01	4.6560-01	5.3437-01	5.8992-01	6.1904-01	6.2174-01	5.4037-01	5.4787-01	5.6740-01
.850	3.7916-01	4.3859-01	4.8194-01	5.4738-01	6.0185-01	6.2901-01	6.2888-01	5.3887-01	5.4662-01	5.6880-01
.900	3.9889-01	4.6025-01	5.0267-01	5.6299-01	6.1568-01	6.4001-01	6.3598-01	5.3470-01	5.4285-01	5.6857-01
.950	4.2241-01	4.8710-01	5.2718-01	5.8370-01	6.3454-01	6.5515-01	6.4560-01	5.2796-01	5.3594-01	5.6566-01
1.000	4.5297-01	5.1510-01	5.5318-01	6.0608-01	6.5339-01	6.6903-01	6.5314-01	5.1844-01	5.2651-01	5.6111-01

ANGULAR DISTRIBUTION OF ELASTICALLY SCATTERED NEUTRONS (RELATIVE VALUES)

INCIDENT NEUTRON ENERGY (MEV)

ANGLE (COS)	.450	.460	.470	.480	.490	.500	.520	.540	.560	.580
-1.000	3.6453-01	3.8361-01	4.8794-01	4.3966-01	5.2845-01	5.5701-01	5.8247-01	6.3843-01	5.9316-01	5.0872-01
-.950	3.6043-01	3.7794-01	4.8082-01	4.3840-01	5.0520-01	5.3075-01	5.6613-01	6.1955-01	5.7745-01	4.9782-01
-.900	3.5822-01	3.7416-01	4.7474-01	4.3714-01	4.8698-01	5.1014-01	5.5294-01	6.0259-01	5.6300-01	4.8819-01
-.850	3.5821-01	3.7290-01	4.7077-01	4.3714-01	4.7378-01	4.9481-01	5.4226-01	5.8814-01	5.5169-01	4.7961-01
-.800	3.6031-01	3.7353-01	4.6741-01	4.3714-01	4.6436-01	4.8362-01	5.3346-01	5.7557-01	5.4164-01	4.7270-01
-.750	3.6377-01	3.7605-01	4.6653-01	4.3840-01	4.5 45-01	4.7507-01	5.2655-01	5.6426-01	5.3284-01	4.6620-01
-.700	3.6870-01	3.7962-01	4.6448-01	4.3966-01	4.5431-01	4.7055-01	5.2089-01	5.5546-01	5.2593-01	4.6117-01
-.650	3.7469-01	3.8486-01	4.6448-01	4.4154-01	4.5368-01	4.6866-01	5.1650-01	5.4730-01	5.1964-01	4.5720-01
-.600	3.8214-01	3.9117-01	4.6469-01	4.4344-01	4.5493-01	4.6891-01	5.1336-01	5.4101-01	5.1461-01	4.5385-01
-.550	3.8991-01	3.9810-01	4.6574-01	4.4596-01	4.5745-01	4.7055-01	5.1147-01	5.3472-01	5.1084-01	4.5175-01
-.500	3.9810-01	4.0565-01	4.6763-01	4.4910-01	4.6122-01	4.7344-01	5.1021-01	5.3033-01	5.0707-01	4.4986-01
-.450	4.0662-01	4.1384-01	4.7035-01	4.5289-01	4.6624-01	4.7758-01	5.0959-01	5.2593-01	5.0393-01	4.4924-01
-.400	4.1656-01	4.2266-01	4.7280-01	4.5603-01	4.7190-01	4.8240-01	5.0896-01	5.2216-01	5.0205-01	4.4924-01
-.350	4.2655-01	4.3211-01	4.7580-01	4.6044-01	4.7618-01	4.8788-01	5.0896-01	5.1839-01	4.9953-01	4.4924-01
-.300	4.3600-01	4.4093-01	4.7873-01	4.6422-01	4.8446-01	4.9341-01	5.0896-01	5.1525-01	4.9828-01	4.5071-01
-.250	4.4608-01	4.5037-01	4.8188-01	4.6863-01	4.9012-01	4.9818-01	5.0896-01	5.1273-01	4.9639-01	4.5154-01
-.200	4.5585-01	4.5982-01	4.8565-01	4.7367-01	4.9577-01	5.0283-01	5.0896-01	5.0959-01	4.9513-01	4.5385-01
-.150	4.6614-01	4.6927-01	4.8880-01	4.7808-01	5.0143-01	5.0748-01	5.0833-01	5.0645-01	4.9388-01	4.5573-01
-.100	4.7527-01	4.7809-01	4.9236-01	4.8312-01	5.0583-01	5.1087-01	5.0833-01	5.0394-01	4.9262-01	4.5845-01
-.050	4.8545-01	4.8754-01	4.9551-01	4.8816-01	5.0960-01	5.1351-01	5.0770-01	5.0079-01	4.9136-01	4.6243-01
.000	4.9479-01	4.9636-01	4.9887-01	4.9320-01	5.1337-01	5.1602-01	5.0644-01	4.9703-01	4.9011-01	4.6599-01
.050	5.0403-01	5.0516-01	5.0215-01	4.9887-01	5.1588-01	5.1714-01	5.0519-01	4.9388-01	4.8822-01	4.6976-01
.100	5.1295-01	5.1337-01	5.0516-01	5.0391-01	5.1714-01	5.1702-01	5.0330-01	4.9011-01	4.8697-01	4.7416-01
.150	5.2282-01	5.2218-01	5.0768-01	5.0894-01	5.1839-01	5.1689-01	5.0142-01	4.8572-01	4.8571-01	4.7939-01
.200	5.3153-01	5.3037-01	5.1062-01	5.1461-01	5.1839-01	5.1525-01	4.9890-01	4.8195-01	4.8382-01	4.8484-01
.250	5.3962-01	5.3793-01	5.1356-01	5.2029-01	5.1777-01	5.1286-01	4.9576-01	4.7755-01	4.8194-01	4.9070-01
.300	5.4896-01	5.4612-01	5.1566-01	5.2532-01	5.1714-01	5.1060-01	4.9261-01	4.7252-01	4.8068-01	4.9699-01
.350	5.5798-01	5.5431-01	5.1797-01	5.3099-01	5.1525-01	5.0683-01	4.8884-01	4.6812-01	4.7880-01	5.0348-01
.400	5.6627-01	5.6187-01	5.2070-01	5.3666-01	5.1400-01	5.0368-01	4.8507-01	4.6310-01	4.7754-01	5.1102-01
.450	5.7430-01	5.7005-01	5.2448-01	5.0453-01	5.1211-01	5.0747-01	4.8130-01	4.5870-01	4.7628-01	5.1877-01
.500	5.8569-01	5.7888-01	5.2700-01	5.4737-01	5.1023-01	4.9626-01	4.7753-01	4.5367-01	4.7566-01	5.2694-01
.550	5.9566-01	5.8769-01	5.2931-01	5.5303-01	5.0960-01	4.9362-01	4.7314-01	4.4927-01	4.7503-01	5.3615-01
.600	6.0637-01	5.9714-01	5.2931-01	5.5871-01	5.0897-01	4.9123-01	4.6999-01	4.4487-01	4.7440-01	5.4537-01
.650	5.6679-01	5.6880-01	5.4422-01	5.6375-01	5.1023-01	4.9072-01	4.6622-01	4.4110-01	4.7503-01	5.5584-01
.700	6.3008-01	6.1793-01	5.3414-01	5.6941-01	5.1211-01	4.9085-01	4.6308-01	4.3796-01	4.7628-01	5.6736-01
.750	6.4271-01	6.2926-01	5.3729-01	5.7508-01	5.1588-01	4.9298-01	4.6057-01	4.3545-01	4.7817-01	5.7908-01
.800	6.5791-01	6.4252-01	5.4001-01	5.8012-01	5.2216-01	4.9788-01	4.5869-01	4.3419-01	4.8068-01	5.9228-01
.850	6.7337-01	6.5634-01	5.4378-01	5.8579-01	5.3033-01	5.0491-01	4.5869-01	4.3356-01	4.8445-01	6.0610-01
.900	6.9172-01	6.7274-01	5.4798-01	5.9146-01	5.4227-01	5.1572-01	4.5869-01	4.3419-01	4.8948-01	6.2139-01
.950	7.1157-01	6.9046-01	5.5216-01	5.9650-01	5.5736-01	5.3017-01	4.6057-01	4.3608-01	4.9639-01	6.3711-01
1.000	7.3318-01	7.0987-01	5.5781-01	6.0217-01	5.7683-01	5.4927-01	4.6434-01	4.3985-01	5.0456-01	6.5446-02

ANGULAR DISTRIBUTION OF ELASTICALLY SCATTERED NEUTRONS (RELATIVE VALUES)

INCIDENT NEUTRON ENERGY (MEV)

ANGLE (COS)	.600	.620	.640	.660	.680	.700	.710	.720	.730	.740
-1.000	4.9880-01	5.6305-01	6.1831-01	6.6286-01	7.1239-01	6.6036-01	5.9626-01	5.1332-01	4.4046-01	3.5313-01
-.950	4.8694-01	5.4440-01	5.9339-01	6.3272-01	6.6615-01	6.1513-01	5.5542-01	4.7077-01	4.1344-01	3.3005-01
-.900	4.7626-01	5.2720-01	5.6993-01	6.0444-01	6.2626-01	5.7240-01	5.1709-01	4.4673-01	3.8768-01	3.2422-01
-.850	4.6621-01	5.1150-01	5.4877-01	5.7805-01	5.8806-01	5.3345-01	4.8191-01	4.1657-01	3.6380-01	3.1040-01
-.800	4.5804-01	4.9707-01	5.2950-01	5.5354-01	5.5160-01	4.9701-01	4.4987-01	3.8092-01	3.4101-01	2.9846-01
-.750	4.5050-01	4.0573-01	5.1275-01	5.3155-01	5.1925-01	4.6371-01	4.1971-01	3.6379-01	3.2171-01	2.8652-01
-.700	4.4421-01	4.7505-01	4.9746-01	5.1144-01	4.8960-01	4.3355-01	3.9269-01	3.4117-01	3.0411-01	2.7647-01
-.650	4.3919-01	4.6502-01	4.8543-01	4.9260-01	4.6302-01	4.0653-01	3.6819-01	3.2106-01	2.8778-01	2.6767-01
-.600	4.3479-01	4.5703-01	4.7107-01	4.7503-01	4.3677-01	3.8202-01	3.4620-01	3.0284-01	2.7395-01	2.5950-01
-.550	4.3165-01	4.5054-01	4.6039-01	4.6118-01	4.1747-01	3.6066-01	3.2735-01	2.8776-01	2.6202-01	2.5385-01
-.500	4.2914-01	4.4469-01	4.5096-01	4.4736-01	3.9811-01	3.4181-01	3.1101-01	2.7457-01	2.5259-01	2.4882-01
-.450	4.2788-01	4.3996-01	4.4258-01	4.3605-01	3.8127-01	3.2540-01	2.9719-01	2.6452-01	2.4568-01	2.4631-01
-.400	4.2725-01	4.3672-01	4.3609-01	4.2537-01	3.6602-01	3.1220-01	2.8651-01	2.5690-01	2.4065-01	2.4568-01
-.350	4.2725-01	4.3558-01	4.3022-01	4.1720-01	3.5502-01	3.0223-01	2.7834-01	2.5195-01	2.3814-01	2.4631-01
-.300	4.2851-01	4.3169-01	4.2541-01	4.0966-01	3.4678-01	2.9469-01	2.7268-01	2.4944-01	2.3877-01	2.4945-01
-.250	4.2976-01	4.3106-01	4.2248-01	4.0400-01	3.3955-01	2.8965-01	2.7017-01	2.5006-01	2.4128-01	2.5448-01
-.200	4.3228-01	4.3044-01	4.1975-01	4.0023-01	3.3559-01	2.8777-01	2.7017-01	2.5321-01	2.4694-01	2.6202-01
-.150	4.3479-01	4.3106-01	4.1871-01	3.9772-01	3.3327-01	2.8040-01	2.7331-01	2.5086-01	2.5510-01	2.7207-01
-.100	4.3856-01	4.3295-01	4.1871-01	3.9583-01	3.3383-01	2.9217-01	2.7897-01	2.6829-01	2.6579-01	2.8463-01
-.050	4.4359-01	4.3483-01	4.1913-01	3.9646-01	3.3547-01	2.9783-01	2.8776-01	2.7960-01	2.7961-01	2.9909-01
.000	4.4861-01	4.3798-01	4.2101-01	3.9782-01	3.4093-01	3.0725-01	2.9907-01	2.9468-01	2.9657-01	3.1669-01
.050	4.5427-01	4.4175-01	4.2395-01	4.0086-01	3.4822-01	3.1919-01	3.1352-01	3.1290-01	3.1668-01	3.3742-01
.100	4.6055-01	4.4614-01	4.2772-01	4.0526-01	3.5715-01	3.3364-01	3.3112-01	3.3363-01	3.3930-01	3.6067-01
.150	4.6809-01	4.5180-01	4.3274-01	4.1091-01	3.6865-01	3.5124-01	3.5185-01	3.5751-01	3.6569-01	3.8643-01
.200	4.7626-01	4.5803-01	4.3881-01	4.1845-01	3.8291-01	3.7197-01	3.7573-01	3.8515-01	3.9522-01	4.1596-01
.250	4.8506-01	4.6499-01	4.4573-01	4.2725-01	3.9931-01	3.9522-01	4.0212-01	4.1594-01	4.2789-01	4.4800-01
.300	4.9448-01	4.7316-01	4.5431-01	4.3793-01	4.1797-01	4.2161-01	4.3228-01	4.4987-01	4.6434-01	4.8382-01
.350	5.0453-01	4.8196-01	4.6374-01	4.4987-01	4.3921-01	4.5114-01	4.6557-01	4.8756-01	5.0392-01	5.2278-01
.400	5.1584-01	4.9202-01	4.7463-01	4.6369-01	4.6227-01	4.8318-01	5.0201-01	5.2840-01	5.4728-01	5.6488-01
.450	5.2778-01	5.0333-01	4.8699-01	4.7877-01	4.8485-01	5.1900-01	5.4160-01	5.7239-01	5.9440-01	6.1137-01
.500	5.4035-01	5.1589-01	5.0102-01	4.9574-01	5.1675-01	5.5732-01	5.8495-01	6.2077-01	6.4465-01	6.6099-01
.550	5.5417-01	5.2909-01	5.1569-01	5.1396-01	5.4766-01	5.9942-01	6.3209-01	6.7230-01	6.9932-01	7.1377-01
.600	5.6862-01	5.4417-01	5.3286-01	5.3469-01	5.8153-01	6.4465-01	6.8235-01	7.2759-01	7.5775-01	7.7095-01
.650	5.8433-01	5.6050-01	5.5129-01	5.5668-01	6.1747-01	6.9304-01	7.3639-01	7.8728-01	8.2058-01	8.3127-01
.700	6.0129-01	5.7810-01	5.7140-01	5.8119-01	6.5584-01	7.4456-01	7.9419-01	8.5074-01	8.8719-01	8.9661-01
.750	6.1889-01	5.9758-01	5.9381-01	6.0758-01	6.9743-01	7.9985-01	8.5577-01	9.1797-01	9.5756-01	9.6573-01
.800	6.3837-01	6.1894-01	6.1811-01	6.3586-01	7.4223-01	8.5391-01	9.2111-01	9.8897-01	1.0323+00	1.0387+00
.850	6.5848-01	6.4158-01	6.4428-01	6.6665-01	7.8948-01	9.2111-01	9.9023-01	1.0644+00	1.1115+00	1.1160+00
.900	6.8047-01	6.6671-01	6.7299-01	6.9932-01	8.4038-01	9.8772-01	1.0637+00	1.1442+00	1.1951+00	1.1970+00
.950	7.0309-01	6.9435-01	7.0485-01	7.3450-01	8.9378-01	1.0575+00	1.1410+00	1.2284+00	1.2837+00	1.2831+00
1.000	7.2759-01	7.2339-01	7.3878-01	7.7220-01	9.5096-01	1.1316+00	1.2227+00	1.3170+00	1.3760+00	1.3736+00

ANGULAR DISTRIBUTION OF ELASTICALLY SCATTERED NEUTRONS (RELATIVE VALUES)

INCIDENT NEUTRON ENERGY (MEV)

ANGLE (COS)	.750	.760	.780	.800	.850	.900	.950	1.000	1.100	1.200
-1.000	2.8024-01	2.3294-01	2.9491-01	2.9958-01	2.9330-01	2.6142-01	2.5637-01	3.0256-01	3.3459-01	3.6041-01
-.950	2.7773-01	2.3846-01	2.8907-01	2.9205-01	2.8347-01	2.5199-01	2.4946-01	2.8607-01	3.1307-01	3.3976-01
-.900	2.7459-01	2.4217-01	2.8293-03	2.8453-01	2.7469-01	2.4508-01	2.4443-01	2.7319-01	2.9579-01	3.2232-01
-.850	2.7145-01	2.4594-01	2.7756-01	2.7826-01	2.6822-01	2.4131-01	2.4129-01	2.6345-01	2.8228-01	3.0795-01
-.800	2.6830-03	2.4849-01	2.7260-01	2.7263-01	2.6279-01	2.3879-01	2.4066-01	2.5622-01	2.7128-01	2.9656-01
-.750	2.6516-01	2.5300-01	2.9506-01	3.0521-01	2.9642-01	2.3879-01	2.4066-01	2.5221-01	2.6445-01	2.8745-01
-.700	2.6265-01	2.5352-01	2.6440-01	2.6385-01	2.5652-01	2.4068-01	2.4254-01	2.5049-01	2.6021-01	2.8085-01
-.650	2.6014-01	2.5515-01	2.6118-01	2.6071-01	2.5549-01	2.4445-01	2.4631-01	2.5104-01	2.5856-01	2.7677-01
-.600	2.5951-01	2.5940-01	2.5940-01	2.5844-01	2.5570-01	2.5010-01	2.5135-01	2.5371-01	2.5934-01	2.7473-01
-.550	2.5825-01	2.6114-01	2.5782-01	2.5759-01	2.5717-01	2.5702-01	2.5763-01	2.5811-01	2.6186-01	2.7410-01
-.500	2.5825-01	2.6453-01	2.5792-01	2.5821-01	2.6073-01	2.6582-01	2.6580-01	2.6486-01	2.6673-01	2.7527-01
-.450	2.5951-01	2.6830-01	2.5885-01	2.5946-01	2.6471-01	2.7524-01	2.7522-01	2.7326-01	2.7356-01	2.7833-01
-.400	2.6202-01	2.7295-01	2.6146-01	2.6260-01	2.7077-01	2.8655-01	2.8590-01	2.8340-01	2.8212-01	2.8281-01
-.350	2.6579-01	2.7866-01	2.6532-01	2.6699-01	2.7809-01	2.9912-01	2.9847-01	2.9502-01	2.9186-01	2.8831-01
-.300	2.7082-01	2.8519-01	2.7043-01	2.7263-01	2.8666-01	3.1295-01	3.1166-01	3.0767-01	3.0293-01	2.9554-01
-.250	2.7773-01	2.9339-01	2.7748-01	2.8015-01	2.9670-01	3.2740-01	3.2612-01	3.2204-01	3.1574-01	3.0394-01
-.200	2.8653-01	3.0307-01	2.8641-01	2.8955-01	3.0862-01	3.4373-01	3.4182-01	3.3767-01	3.2980-01	3.1359-01
-.150	2.9658-01	3.1320-01	2.9710-01	3.0083-01	3.2199-01	3.6008-01	3.5942-01	3.5487-01	3.4480-01	3.2428-01
-.100	3.0978-01	3.2602-01	3.1007-01	3.1399-01	3.3683-01	3.7830-01	3.7764-01	3.7302-01	3.6137-01	3.3692-01
-.050	3.2423-01	3.4126-01	3.2432-01	3.2840-01	3.5271-01	3.9715-01	3.9712-01	3.9195-01	3.7873-01	3.5090-01
.000	3.4120-01	3.5785-01	3.4158-01	3.4595-01	3.7130-01	4.1726-01	4.1786-01	4.1221-01	3.9710-01	3.6566-01
.050	3.6067-01	3.7649-01	3.6097-01	3.6538-01	3.9115-01	4.3800-01	4.3965-01	4.3365-01	4.1698-01	3.8263-01
.100	3.8266-01	3.9760-01	3.8244-01	3.8669-01	4.1267-01	4.6062-01	4.6310-01	4.5635-01	4.3810-01	4.0132-01
.150	4.0780-01	4.2267-01	4.0718-01	4.1113-01	4.3628-01	4.8324-01	4.8698-01	4.8000-01	4.6080-01	4.2198-01
.200	4.3482-01	4.4761-01	4.3425-01	4.3800-01	4.6239-01	5.0775-01	5.1274-01	5.0474-01	4.8397-01	4.4396-01
.250	4.6561-01	4.7743-01	4.6383-01	4.6691-01	4.8954-01	5.3352-01	5.3913-01	5.3034-01	5.0895-01	4.6863-01
.300	4.9891-01	5.0901-01	4.9689-01	4.9950-01	5.1983-01	5.5991-01	5.6678-01	5.5760-01	5.3589-01	4.9588-01
.350	5.3535-01	5.4369-01	5.3269-01	5.3460-01	5.5220-01	5.8819-01	5.9568-01	5.8557-01	5.6385-01	5.2541-01
.400	5.7494-01	5.8151-01	5.7171-01	5.7283-01	5.8709-01	6.1772-01	6.2584-01	6.1518-01	5.9377-01	5.5753-01
.450	6.1830-01	6.2268-01	6.1458-01	6.1482-01	6.2489-01	6.4849-01	6.5728-01	6.4629-01	6.2613-01	5.9342-01
.500	6.6482-01	6.6655-01	6.6017-01	6.5929-01	6.6476-01	6.8116-01	6.8996-01	6.7858-01	6.5999-01	6.3196-01
.550	7.1509-01	7.1547-01	7.1013-01	7.0818-01	7.0824-01	7.1515-01	7.2326-01	7.1251-01	6.9706-01	6.7519-01
.600	7.6912-01	7.6724-01	7.6341-01	7.6020-01	7.5436-01	7.5159-01	7.5844-01	7.4782-01	7.3551-01	7.2150-01
.650	8.2630-01	8.2228-01	8.2033-01	8.1600-01	8.0368-01	7.8929-01	7.9489-01	7.8490-01	7.7761-01	7.7321-01
.700	8.8788-01	8.8122-01	8.8134-01	8.7556-01	8.5608-01	8.2951-01	8.3258-01	8.2442-01	8.2310-01	8.2944-01
.750	9.5322-01	9.4392-01	9.4656-01	9.3946-01	9.1244-01	8.7223-01	8.7154-01	8.6532-01	8.7129-01	8.9058-01
.800	1.0230+00	1.0115+00	1.0158+00	1.0071+00	9.7201-01	9.1747-01	9.1175-01	9.0849-01	9.2350-01	9.5725-01
.850	1.0965+00	1.0824+00	1.0898+00	1.0798+00	1.0359+00	9.6459-01	9.5322-01	9.5393-01	9.7936-01	1.0304+00
.900	1.1744+00	1.1582+00	1.1682+00	1.1569+00	1.1038+00	1.0149+00	9.9658-01	1.0022+00	1.0401+00	1.1104+00
.950	1.2567+00	1.2379+00	1.2510+00	1.2384+00	1.1756+00	1.0683+00	1.0418+00	1.0533+00	1.1054+00	1.1969+00
1.000	1.3434+00	1.3221+00	1.3388+00	1.3249+00	1.2521+00	1.1248+00	1.0877+00	1.1063+00	1.1751+00	1.2911+00

A-73

ANGULAR DISTRIBUTION OF ELASTICALLY SCATTERED NEUTRONS (RELATIVE VALUES)

INCIDENT NEUTRON ENERGY (MEV)

ANGLE (COS)	1.300	1.400	1.500	1.600	1.700	1.800	1.900	2.000	2.200	2.400
-1.000	4.0026-01	4.0212-01	3.5526-01	3.3474-01	3.4054-01	3.4045-01	3.3445-01	3.2768-01	2.7249-01	1.5367-01
-.950	3.7827-01	3.7636-01	3.4667-01	3.3410-01	3.3866-01	3.3763-01	3.3100-01	3.2411-01	2.6871-01	1.5111-01
-.900	3.6005-01	3.5500-01	3.3954-01	3.3346-01	3.3677-01	3.3486-01	3.2774-01	3.2111-01	2.6552-01	1.4871-01
-.850	3.4559-01	3.3804-01	3.3408-01	3.3283-01	3.3426-01	3.3110-01	3.2335-01	3.1721-01	2.6218-01	1.4816-01
-.800	3.3366-01	3.2421-01	3.2947-01	3.3219-01	3.3237-01	3.2828-01	3.1990-01	3.1317-01	2.5918-01	1.4953-01
-.750	3.2486-01	3.1353-01	3.2590-01	3.3155-01	3.3049-01	3.2552-01	3.1663-01	3.0972-01	2.5677-01	1.5097-01
-.700	3.1858-01	3.0599-01	3.2339-01	3.3092-01	3.2860-01	3.2275-01	3.1338-01	3.0580-01	2.5513-01	1.5639-01
-.650	3.1418-01	3.0096-01	3.2169-01	3.3028-01	3.2672-01	3.2006-01	3.1031-01	3.0270-01	2.5370-01	1.5986-01
-.600	3.1229-01	2.9702-01	3.2106-01	3.3092-01	3.2546-01	3.1799-01	3.0786-01	3.0023-01	2.5281-01	1.6341-01
-.550	3.1229-01	2.9719-01	3.2170-01	3.3155-01	3.2483-01	3.1653-01	3.0603-01	2.9855-01	2.5245-01	1.6705-01
-.500	3.1355-01	2.9845-01	3.2275-01	3.3170-01	3.2483-01	3.1609-01	3.0533-01	2.9750-01	2.5263-01	1.7080-01
-.450	3.1669-01	3.0159-01	3.2487-01	3.3283-01	3.2546-01	3.1633-01	3.0544-01	2.9702-01	2.5510-01	1.8094-01
-.400	3.2046-01	3.0599-01	3.2846-01	3.3537-01	3.2672-01	3.1688-01	3.0585-01	2.9805-01	2.5831-01	1.8930-01
-.350	3.2612-01	3.1165-01	3.3269-01	3.3855-01	3.2923-01	3.1899-01	3.0783-01	2.9962-01	2.6239-01	1.9984-01
-.300	3.3303-01	3.1856-01	3.3840-01	3.4301-01	3.3237-01	3.2147-01	3.1030-01	3.0328-01	2.6781-01	2.0877-01
-.250	3.4057-01	3.2735-01	3.4475-01	3.4809-01	3.3740-01	3.2652-01	3.1547-01	3.0841-01	2.7424-01	2.1799-01
-.200	3.4936-01	3.3678-01	3.5237-01	3.5446-01	3.4306-01	3.3194-01	3.2112-01	3.1470-01	2.8355-01	2.3378-01
-.150	3.5879-01	3.4746-01	1.7014-01	1.7119-01	3.5060-01	3.4759-01	3.4188-01	3.2350-01	2.9369-01	2.4528-01
-.100	3.6947-01	3.5877-01	3.7101-01	3.7101-01	3.5876-01	3.5416-01	3.3748-01	3.3357-01	3.0498-01	2.5844-01
-.050	3.8141-01	3.7196-01	3.8266-01	3.8182-01	3.6944-01	3.5844-01	3.4880-01	3.4638-01	3.1840-01	2.7148-01
.000	3.9397-01	3.8579-01	3.9539-01	3.9392-01	3.8138-01	3.7059-01	3.6156-01	3.5998-01	3.3542-01	2.9522-01
.050	4.0843-01	4.0067-01	4.0917-01	4.0728-01	3.9521-01	3.8507-01	3.7688-01	3.7599-01	3.5504-01	3.2160-01
.100	4.2351-01	4.1720-01	4.2550-01	4.2319-01	4.1029-01	4.0009-01	3.9264-01	3.9441-01	3.7555-01	3.4436-01
.150	4.3985-01	4.3480-01	4.4263-01	4.4037-01	4.2788-01	4.1843-01	4.1264-01	4.1569-01	3.9956-01	3.7195-01
.200	4.5807-01	4.5427-01	4.6220-01	4.6010-01	4.4798-01	4.3927-01	4.3396-01	4.3877-01	4.2727-01	4.0829-01
.250	4.7755-01	4.7564-01	4.8362-01	4.8174-01	4.6997-01	4.6204-01	4.5793-01	4.6450-01	4.5718-01	4.4522-01
.300	4.9891-01	4.9868-01	5.0696-01	5.0528-01	4.9385-01	4.8680-01	4.8414-01	4.9228-01	4.9182-01	4.9307-01
.350	5.2216-01	5.2402-01	5.3263-01	5.3138-01	5.2024-01	5.1412-01	5.1303-01	5.2339-01	5.2921-01	5.4160-01
.400	5.4793-01	5.5166-01	5.6064-01	5.6001-01	5.4977-01	5.4488-01	5.4536-01	5.5640-01	5.7022-01	5.9883-01
.450	5.7620-01	5.8182-01	5.9140-01	5.9119-01	5.8118-01	5.7732-01	5.7959-01	5.9276-01	6.1539-01	6.6093-01
.500	6.0699-01	6.1512-01	6.2472-01	6.2492-01	6.1574-01	6.1331-01	6.1764-01	6.3335-01	6.6344-01	7.2188-01
.550	6.4095-01	6.5157-01	6.6055-01	6.6118-01	6.5345-01	6.5282-01	6.5929-01	6.7576-01	7.1691-01	7.9740-01
.600	6.7802-01	6.9115-01	6.9982-01	7.0064-01	6.9366-01	6.9454-01	7.0334-01	7.2181-01	7.7409-01	8.7581-01
.650	7.1949-01	7.3513-01	7.4204-01	7.4267-01	7.3702-01	7.3985-01	7.5115-01	7.7164-01	8.3491-01	9.5680-01
.700	7.6473-01	7.8351-01	7.8785-01	7.8785-01	7.8351-01	7.8835-01	8.0249-01	8.2630-01	8.9925-01	1.0365+00
.750	8.1436-01	8.3629-01	8.3723-01	8.3617-01	8.3315-01	8.4012-01	8.5709-01	8.8310-01	9.6994-01	1.1329+00
.800	8.6840-01	8.9473-01	8.9070-01	8.8775-01	8.8593-01	8.9498-01	9.1502-01	9.4392-01	1.0439+00	1.2297+00
.850	9.2809-01	9.5881-01	9.4857-01	9.4311-01	9.4248-01	9.5379-01	9.7740-01	1.0105+00	1.1215+00	1.3231+00
.900	9.9406-01	1.0286+00	1.0096+00	1.0010+00	1.0028+00	1.0171+00	1.0438+00	1.0790+00	1.2057+00	1.4349+00
.950	1.0657+00	1.1058+00	1.0764+00	1.0634+00	1.0669+00	1.0838+00	1.1141+00	1.1528+00	1.2945+00	1.5454+00
1.000	1.1442+00	1.1894+00	1.1474+00	1.1289+00	1.1341+00	1.1538+00	1.1882+00	1.2319+00	1.3876+00	1.6528+00

ANGULAR DISTRIBUTION OF ELASTICALLY SCATTERED NEUTRONS (RELATIVE VALUES)

INCIDENT NEUTRON ENERGY (MEV)

ANGLE (COS)	2.600	2.800	3.000	3.500	4.000	4.500	5.000	5.500	6.000	6.500
-1.000	8.2649-02	3.5393-02	1.1750-02	5.7115-02	2.3702-01	2.8200-01	3.2320-01	3.5224-01	3.6732-01	3.6679-01
-.950	7.9803-02	3.1379-02	5.7684-03	4.2113-02	2.0920-01	2.5067-01	2.9077-01	3.1960-01	3.3252-01	3.3663-01
-.900	7.6843-02	2.7020-02	1.2726-02	2.6212-02	1.7853-01	2.0289-01	2.3226-01	2.5628-01	2.7118-01	2.8079-01
-.850	7.7013-02	2.6776-02	1.1890-02	1.5580-02	1.5241-01	1.6589-01	1.8560-01	2.0388-01	2.1850-01	2.3072-01
-.800	8.0267-02	3.0708-02	7.9564-04	1.2121-02	1.3494-01	1.3907-01	1.4990-01	1.6209-01	1.7448-01	1.8688-01
-.750	8.3579-02	3.4919-02	4.9244-03	1.2083-02	1.2508-01	1.2160-01	1.2441-01	1.3041-01	1.3926-01	1.4987-01
-.700	9.2909-02	4.6707-02	1.7559-02	2.1047-02	1.2185-01	1.1240-01	1.0822-01	1.0824-01	1.1277-01	1.2022-01
-.650	9.9268-02	5.5091-02	2.6981-02	2.9664-02	1.2441-01	1.1055-01	1.0061-01	9.5178-02	9.5008-02	9.8370-02
-.600	1.0561-01	6.3554-02	3.6779-02	4.0315-02	1.3183-01	1.1517-01	1.0078-01	9.0641-02	8.5835-02	8.4641-02
-.550	1.1192-01	7.2037-02	4.6831-02	5.2608-02	1.4331-01	1.2531-01	1.0784-01	9.3904-02	8.5143-02	7.9358-02
-.500	1.1818-01	8.0488-02	5.7014-02	6.6149-02	1.5808-01	1.4011-01	1.2102-01	1.0456-01	9.2269-02	8.2253-02
-.450	1.3320-01	9.9224-02	7.8043-02	8.8725-02	1.7536-01	1.5868-01	1.3937-01	1.2155-01	1.0696-01	9.3362-02
-.400	1.4509-01	1.1401-01	9.4876-02	1.0864-01	1.9454-01	1.8011-01	1.6189-01	1.4399-01	1.2838-01	1.1210-01
-.350	1.5988-01	1.3215-01	1.1524-01	1.3159-01	2.1485-01	2.0363-01	1.8780-01	1.7108-01	1.5554-01	1.3770-01
-.300	1.7141-01	1.4590-01	1.3082-01	1.5082-01	2.3572-01	2.2835-01	2.1577-01	2.0130-01	1.8738-01	1.6926-01
-.250	1.8276-01	1.5925-01	1.4564-01	1.6928-01	2.5654-01	2.5336-01	2.4493-01	2.3378-01	2.2259-01	2.0545-01
-.200	2.0273-01	1.8234-01	1.7048-01	1.9493-01	2.7687-01	2.7797-01	2.7418-01	2.6714-01	2.5978-01	2.4486-01
-.150	2.1727-01	2.0123-01	1.9473-01	2.3943-01	3.4441-01	3.0796-01	3.0249-01	3.0010-01	2.9740-01	2.8580-01
-.100	2.2998-01	2.1191-01	2.0166-01	2.3017-01	3.1422-01	3.2298-01	3.2083-01	3.3131-01	3.3373-01	3.2639-01
-.050	2.4310-01	2.2518-01	2.1504-01	2.4484-01	3.3067-01	3.4215-01	3.5225-01	3.5944-01	3.6708-01	3.6466-01
.000	2.7076-01	2.5527-01	2.4569-01	2.7177-01	3.4534-01	3.5852-01	3.7195-01	3.8327-01	3.9580-01	3.9859-01
.050	3.0098-01	2.8771-01	2.7832-01	2.9919-01	3.5822-01	3.7181-01	3.8731-01	4.0177-01	4.1829-01	4.2616-01
.100	3.2497-01	3.1217-01	3.0217-01	3.1926-01	3.6995-01	3.8201-01	3.9791-01	4.1412-01	4.3328-01	4.4561-01
.150	3.5440-01	3.4225-01	3.3138-01	3.4238-01	3.8006-01	3.8919-01	4.0364-01	4.1982-01	4.3970-01	4.5537-01
.200	3.9531-01	3.8542-01	3.7394-01	3.7514-01	3.8956-01	3.9396-01	4.0474-01	4.1871-01	4.3702-01	4.5433-01
.250	4.3586-01	4.2755-01	4.1509-01	4.0667-01	3.9946-01	3.9713-01	4.0194-01	4.1129-01	4.2525-01	4.4199-01
.300	4.9082-01	4.8620-01	4.7329-01	4.5137-01	4.1083-01	4.0010-01	3.9652-01	3.9863-01	4.0522-01	4.1876-01
.350	5.4534-01	5.4372-01	5.3009-01	4.9576-01	4.2521-01	4.0449-01	3.9039-01	3.8274-01	3.7084-01	3.8619-01
.400	6.1144-01	6.1470-01	6.0107-01	5.5242-01	4.4424-01	4.1269-01	3.8624-01	3.6645-01	3.4916-01	3.4717-01
.450	6.8305-01	6.9172-01	6.7840-01	6.1620-01	4.7050-01	4.2702-01	3.8774-01	3.5391-01	3.2076-01	3.0641-01
.500	7.5103-01	7.6328-01	7.4927-01	6.7331-01	4.9459-01	4.5185-01	3.9955-01	3.5070-01	3.0022-01	2.7025-01
.550	8.3994-01	8.6117-01	8.5049-01	7.6787-01	5.5538-01	4.9431-01	4.2764-01	3.6405-01	2.9617-01	2.5048-01
.600	9.3129-01	9.6133-01	9.5385-01	8.6513-01	6.2139-01	5.5586-01	4.7931-01	4.0311-01	3.1980-01	2.5782-01
.650	1.0254+00	1.0649+00	1.0621+00	9.7402-01	7.0943-01	6.4478-01	5.6353-01	4.7930-01	3.8536-01	3.0976-01
.700	1.1163+00	1.1652+00	1.1682+00	1.0910+00	8.2479-01	7.6087-01	6.9102-01	6.0664-01	5.1074-01	4.2773-01
.750	1.2309+00	1.2945+00	1.3072+00	1.2451+00	9.7345-01	9.3852-01	8.7481-01	8.0155-01	7.1779-01	6.3856-01
.800	1.3456+00	1.4251+00	1.4500+00	1.4168+00	1.1621+00	1.1626+00	1.1303+00	1.0060+00	1.0339+00	9.7578-01
.850	1.4544+00	1.5500+00	1.5901+00	1.6044+00	1.4005+00	1.4555+00	1.4751+00	1.4026+00	1.4896+00	1.4790+00
.900	1.5901+00	1.7093+00	1.7705+00	1.8437+00	1.6960+00	1.8298+00	1.9301+00	2.0217+00	2.1256+00	2.1992+00
.950	1.7282+00	1.8811+00	1.9794+00	2.1811+00	2.1836+00	2.3196+00	2.5199+00	2.7371+00	2.9854+00	3.1942+00
1.000	1.8708+00	2.0756+00	2.2390+00	2.6873+00	3.0230+00	3.3159+00	3.6439+00	3.9648+00	4.2109+00	4.5464+00

ANGULAR DISTRIBUTION OF ELASTICALLY SCATTERED NEUTRONS (RELATIVE VALUES)

INCIDENT NEUTRON ENERGY (MEV)

ANGLE (COS)	7.000	7.500	8.000	8.500	9.000	10.000	11.000	12.000	13.000	14.000
-1.000	3.5106-01	3.3141-01	3.0857-01	2.5227-01	1.7261-01	1.1414-01	8.1160-02	7.3651-02	6.4107-02	6.1625-02
-.950	3.3024-01	3.0903-01	2.7272-01	2.3173-01	1.8258-01	1.2697-01	9.0905-02	7.4307-02	6.2443-02	6.0068-02
-.900	2.8419-01	2.6827-01	2.3216-01	2.1057-01	1.9195-01	1.4913-01	1.1516-01	9.0069-02	7.1760-02	6.0936-02
-.850	2.4024-01	2.4028-01	2.3040-01	2.1470-01	1.9181-01	1.6031-01	1.3006-01	1.0105-01	7.9149-02	6.2401-02
-.800	1.9933-01	2.0490-01	2.0314-01	1.9646-01	1.8404-01	1.6271-01	1.3751-01	1.0844-01	8.5363-02	6.5006-02
-.750	1.6251-01	1.7073-01	1.7412-01	1.7422-01	1.7053-01	1.5818-01	1.3891-01	1.1271-01	9.0560-02	6.8801-02
-.700	1.3098-01	1.3971-01	1.4606-01	1.5056-01	1.5305-01	1.4858-01	1.3564-01	1.1423-01	9.4612-02	7.3362-02
-.650	1.0569-01	1.1298-01	1.1998-01	1.2683-01	1.3351-01	1.3554-01	1.2876-01	1.1314-01	9.7207-02	7.6138-02
-.600	8.7468-02	9.1948-02	9.7936-02	1.0515-01	1.1360-01	1.2059-01	1.1925-01	1.0965-01	9.8010-02	8.2259-02
-.550	7.7057-02	7.7354-02	8.1405-02	8.1405-02	9.5310-02	1.0529-01	1.0814-01	1.0386-01	9.6598-02	8.4974-02
-.500	7.4971-02	7.1304-02	7.1484-02	7.4217-02	7.9924-02	9.1163-02	9.6579-02	9.6170-02	9.2021-02	8.5571-02
-.450	8.1292-02	7.3193-02	6.9209-02	6.7607-02	6.8971-02	7.9501-02	8.5577-02	8.7198-02	8.6059-02	8.3723-02
-.400	9.5875-02	8.3478-02	7.5159-02	6.6248-02	6.3636-02	7.1679-02	7.6385-02	7.7742-02	7.9110-02	7.9382-02
-.350	1.1841-01	1.0247-01	8.9561-02	7.6724-02	6.4949-02	6.8939-02	7.0271-02	7.0428-02	7.0428-02	7.2872-02
-.300	1.4809-01	1.2895-01	1.1219-01	9.3236-02	7.3614-02	7.2370-02	6.8537-02	6.2120-02	6.1942-02	6.5062-02
-.250	1.8379-01	1.6273-01	1.4260-01	1.1775-01	9.0044-02	8.2794-02	7.2345-02	5.0703-02	5.5104-02	5.7137-02
-.200	2.2410-01	2.0228-01	1.7971-01	1.4966-01	1.1437-01	1.0083-01	8.2825-02	6.0350-02	5.1704-02	5.0789-02
-.150	2.6739-01	2.4609-01	2.2217-01	1.8800-01	1.4612-01	1.2669-01	1.0081-01	6.0468-02	5.3460-02	4.7859-02
-.100	3.1164-01	2.9217-01	2.6816-01	2.3133-01	1.8446-01	1.6003-01	1.2662-01	8.4207-02	6.2036-02	5.0353-02
-.050	3.5470-01	3.3829-01	3.1548-01	2.7774-01	2.2792-01	1.9996-01	1.6015-01	1.0050-01	7.8904-02	6.0068-02
-.000	3.9428-01	3.8199-01	3.6169-01	3.2500-01	2.7471-01	2.4509-01	2.0065-01	1.4130-01	1.0485-01	7.8515-02
.050	4.2797-01	4.2060-01	4.0386-01	3.9621-01	3.9151-01	2.9324-01	2.4352-01	2.0233-01	1.4008-01	1.0663-01
.100	4.5348-01	4.5146-01	4.3919-01	4.1048-01	3.6739-01	3.4154-01	2.9563-01	2.2969-01	1.0366-01	1.4423-01
.150	4.6873-01	4.7197-01	4.6462-01	4.4238-01	4.0669-01	3.8640-01	3.4438-01	2.8064-01	2.3348-01	1.9014-01
.200	4.7192-01	4.7963-01	4.7740-01	4.6274-01	4.3650-01	4.2378-01	4.0071-01	3.3129-01	2.8612-01	2.4168-01
.250	4.6196-01	4.7320-01	4.7520-01	4.6045-01	4.5279-01	4.4923-01	4.2386-01	3.7660-01	3.3603-01	2.9459-01
.300	4.3868-01	4.5153-01	4.5646-01	4.5705-01	4.5209-01	4.5020-01	4.4455-01	4.1092-01	3.7957-01	3.4309-01
.350	4.0298-01	4.1481-01	4.2076-01	4.2711-01	4.3179-01	4.4717-01	4.4583-01	4.2776-01	4.0745-01	3.8005-01
.400	3.5738-01	3.6513-01	3.6948-01	3.7094-01	3.9068-01	4.1335-01	4.2360-01	4.2141-01	4.1358-01	3.9784-01
.450	3.0651-01	3.0682-01	3.0644-01	3.1530-01	3.3009-01	3.5683-01	3.7600-01	3.8761-01	3.9208-01	3.8927-01
.500	2.5742-01	2.4609-01	2.3855-01	2.4242-01	2.5516-01	2.8124-01	3.0478-01	3.2500-01	3.4032-01	3.4966-01
.550	2.2060-01	1.9635-01	1.7706-01	1.7122-01	1.7600-01	1.9577-01	2.1745-01	2.4104-01	2.6114-01	2.7956-01
.600	2.1034-01	1.7068-01	1.3842-01	1.1880-01	1.1608-01	1.1600-01	1.3021-01	1.4779-01	1.6695-01	1.8883-01
.650	2.4574-01	1.9122-01	1.4606-01	1.1043-01	8.4289-02	7.4770-02	7.1400-02	7.4204-02	8.4766-02	1.0255-01
.700	3.5173-01	2.8629-01	2.3165-01	1.8152-01	1.3801-01	1.0941-01	8.6004-02	6.7796-02	6.2000-02	6.8587-02
.750	5.6021-01	4.9295-01	4.3744-01	3.8046-01	3.2642-01	2.8240-01	2.4117-01	2.0271-01	1.7986-01	1.6612-01
.800	9.1112-01	8.5828-01	8.1845-01	7.7183-01	7.2508-01	6.7084-01	6.3347-01	5.8910-01	5.5570-01	5.2992-01
.850	1.4548+00	1.4430+00	1.4451+00	1.4401+00	1.4349+00	1.4144+00	1.3976+00	1.3044+00	1.3665+00	1.3466+00
.900	2.2529+00	2.3214+00	2.4068+00	2.4942+00	2.5884+00	2.6423+00	2.7155+00	2.0080+00	2.0634+00	2.9004+00
.950	3.3805+00	3.5863+00	3.8145+00	4.0731+00	4.3595+00	4.5657+00	4.8323+00	5.1592+00	5.3951+00	5.5904+00
1.000	4.9320+00	5.3530+00	5.8084+00	6.3542+00	6.9712+00	7.4680+00	8.1179+00	8.9202+00	9.5548+00	1.0130+01

A-76

ANGULAR DISTRIBUTION OF ELASTICALLY SCATTERED NEUTRONS (RELATIVE VALUES)

INCIDENT NEUTRON ENERGY (MEV)

ANGLE (COS)	15.000	16.000	17.000	18.000	19.000	20.000
-1.000	5.6010-02	5.0520-02	4.6518-02	4.3574-02	4.0793-02	3.8472-02
-.950	5.3594-02	4.7578-02	4.4550-02	4.3668-02	4.0305-02	3.6003-02
-.900	5.2117-02	4.7128-02	4.2787-02	4.0154-02	3.7810-02	3.6228-02
-.850	5.0571-02	4.3737-02	3.9164-02	3.7764-02	3.6610-02	3.6677-02
-.800	5.1209-02	4.2690-02	3.7544-02	3.6405-02	3.5789-02	3.6056-02
-.750	5.4010-02	4.3987-02	3.7971-02	3.6218-02	3.5453-02	3.6766-02
-.700	5.8490-02	4.7328-02	4.0204-02	3.7249-02	3.5724-02	3.6542-02
-.650	6.4026-02	5.2166-02	4.4204-02	3.9592-02	3.6910-02	3.6632-02
-.600	6.9699-02	5.7901-02	4.9290-02	4.3059-02	3.9029-02	3.7260-02
-.550	7.4594-02	5.3586-02	5.4814-02	4.7322-02	4.2560-02	4.0043-02
-.500	7.7817-02	6.8424-02	6.0107-02	5.1961-02	4.5770-02	4.0941-02
-.450	7.8728-02	7.1565-02	6.4327-02	5.6319-02	4.9757-02	4.3904-02
-.400	7.6975-02	7.2414-02	6.6841-02	5.9879-02	5.3601-02	4.7316-02
-.350	7.2552-02	7.0717-02	6.7155-02	6.1941-02	5.6639-02	5.0728-02
-.300	6.5961-02	6.6476-02	6.4987-02	6.2035-02	5.8203-02	5.3511-02
-.250	5.8126-02	6.0295-02	6.0586-02	6.0020-02	5.8160-02	5.5172-02
-.200	5.0465-02	5.3113-02	5.4465-02	5.5944-02	5.5991-02	5.5127-02
-.150	4.4729-02	4.6381-02	4.7726-02	5.0462-02	5.1964-02	5.3107-02
-.100	4.2968-02	4.1942-02	4.1809-02	4.4605-02	4.6712-02	4.9336-02
-.050	4.7179-02	4.1842-02	3.8860-02	3.9967-02	4.1428-02	4.4407-02
.000	5.9280-02	4.8176-02	4.0760-02	3.8514-02	3.7012-02	3.9864-02
.050	8.0739-02	6.2838-02	4.9736-02	4.2496-02	3.8074-02	3.7485-02
.100	1.1209-01	8.7028-02	6.7481-02	5.3976-02	4.4452-02	3.9595-02
.150	1.5293-01	1.2109-01	9.5021-02	7.4594-02	5.9073-02	4.0707-02
.200	2.0138-01	1.6408-01	1.3231-01	1.0524-01	8.3497-02	6.6491-02
.250	2.5388-01	2.1340-01	1.7766-01	1.4515-01	1.1793-01	9.5303-02
.300	3.0519-01	2.6462-01	2.2756-01	1.9196-01	1.6096-01	1.3351-01
.350	3.4828-01	3.1125-01	2.7624-01	2.4083-01	2.0080-01	1.7809-01
.400	3.7522-01	3.4536-01	3.1601-01	2.8459-01	2.5500-01	2.2594-01
.450	3.7782-01	3.5818-01	3.3775-01	3.1406-01	2.9060-01	2.6621-01
.500	3.4978-01	3.4202-01	3.3258-01	3.1941-01	3.0515-01	2.8893-01
.550	2.8933-01	2.9280-01	2.9434-01	2.9251-01	2.8084-01	2.8202-01
.600	2.0373-01	2.1490-01	2.2447-01	2.3174-01	2.3719-01	2.4066-01
.650	1.1565-01	1.2800-01	1.3937-01	1.4979-01	1.5912-01	1.6740-01
.700	7.1804-02	7.6900-02	8.1204-02	8.5602-02	8.9856-02	9.4047-02
.750	1.5551-01	1.4563-01	1.3404-01	1.2229-01	1.1087-01	9.9614-02
.800	5.0257-01	4.7672-01	4.4627-01	4.1325-01	3.7935-01	3.4400-01
.850	1.3235+00	1.2973+00	1.2611+00	1.2172+00	1.1694+00	1.1162+00
.900	2.9320+00	2.9537+00	2.9509+00	2.9500+00	2.9315+00	2.9021+00
.950	5.7818+00	5.9570+00	6.1132+00	6.2513+00	6.3737+00	6.4798+00
1.000	1.0716+01	1.1290+01	1.1871+01	1.2451+01	1.3020+01	1.3601+01

OF UNIT 5 AT INTERNAL SEQUENCE NUMBER 00103, LOCATION 014000

ANGULAR DISTRIBUTION OF INELASTICALLY SCATTERED NEUTRONS(2.0800 MEV LEVEL)

INCIDENT NEUTRON ENERGY(MEV)

ANGLE (COS)	2.171	2.500	3.000	3.500	4.000	4.500	5.000	5.500	6.000	6.500
-1.000	5.1174-01	5.0069-01	5.0073-01	4.9358-01	4.9254-01	4.9709-01	4.9977-01	5.0196-01	5.0328-01	5.0541-01
-.900	5.0827-01	5.0484-01	5.0073-01	4.9559-01	4.9546-01	4.9993-01	5.0281-01	5.0535-01	5.0729-01	5.0978-01
-.800	5.0530-01	5.0295-01	5.0035-01	4.9734-01	4.9768-01	5.0110-01	5.0368-01	5.0600-01	5.0785-01	5.1018-01
-.700	5.0282-01	5.0162-01	5.0035-01	4.9892-01	4.9932-01	5.0142-01	5.0325-01	5.0492-01	5.0637-01	5.0795-01
-.600	5.0035-01	5.0014-01	4.9998-01	4.9981-01	5.0029-01	5.0135-01	5.0238-01	5.0320-01	5.0403-01	5.0475-01
-.500	4.9857-01	4.9885-01	4.9960-01	5.0075-01	5.0114-01	5.0083-01	5.0064-01	5.0057-01	5.0073-01	5.0063-01
-.400	4.9669-01	4.9812-01	4.9960-01	5.0144-01	5.0164-01	5.0035-01	4.9933-01	4.9836-01	4.9749-01	4.9648-01
-.300	4.9589-01	4.9758-01	4.9960-01	5.0215-01	5.0203-01	4.9945-01	4.9760-01	4.9603-01	4.9496-01	4.9342-01
-.200	4.9490-01	4.9712-01	4.9960-01	5.0252-01	5.0223-01	4.9900-01	4.9672-01	4.9454-01	4.9248-01	4.9030-01
-.100	4.9440-01	4.9685-01	4.9960-01	5.0287-01	5.0242-01	4.9855-01	4.9586-01	4.9337-01	4.9120-01	4.8888-01
.000	4.9440-01	4.9685-01	4.9960-01	5.0287-01	5.0242-01	4.9853-01	4.9542-01	4.9276-01	4.9077-01	4.8836-01
.100	4.9440-01	4.9685-01	4.9960-01	5.0287-01	5.0242-01	4.9855-01	4.9586-01	4.9337-01	4.9120-01	4.8888-01
.200	4.9490-01	4.9712-01	4.9960-01	5.0252-01	5.0225-01	4.9900-01	4.9672-01	4.9454-01	4.9240-01	4.9038-01
.300	4.9589-01	4.9758-01	4.9960-01	5.0215-01	5.0203-01	4.9945-01	4.9760-01	4.9603-01	4.9496-01	4.9342-01
.400	4.9687-01	4.9840-01	4.9998-01	5.0150-01	5.0159-01	5.0035-01	4.9933-01	4.9836-01	4.9749-01	4.9648-01
.500	4.9836-01	4.9914-01	4.9998-01	5.0082-01	5.0110-01	5.0083-01	5.0064-01	5.0057-01	5.0073-01	5.0063-01
.600	5.0035-01	5.0014-01	4.9998-01	4.9981-01	5.0029-01	5.0135-01	5.0238-01	5.0328-01	5.0403-01	5.0475-01
.700	5.0282-01	5.0162-01	5.0035-01	4.9892-01	4.9932-01	5.0142-01	5.0325-01	5.0492-01	5.0637-01	5.0795-01
.800	5.0530-01	5.0295-01	5.0035-01	4.9734-01	4.9768-01	5.0110-01	5.0368-01	5.0600-01	5.0785-01	5.1018-01
.900	5.0827-01	5.0484-01	5.0073-01	4.9559-01	4.9546-01	4.9993-01	5.0281-01	5.0535-01	5.0729-01	5.0978-01
1.000	5.1174-01	5.0069-01	5.0073-01	4.9358-01	4.9254-01	4.9709-01	4.9977-01	5.0196-01	5.0328-01	5.0541-01

INCIDENT NEUTRON ENERGY(MEV)

ANGLE	7.000	7.500	8.000	8.500	9.000
-1.000	5.0779-01	5.5634-01	4.7013-01	4.7013-01	4.7013-01
-.900	5.1243-01	5.6152-01	4.7469-01	4.7469-01	4.7469-01
-.800	5.1267-01	5.6161-01	4.7463-01	4.7463-01	4.7463-01
-.700	5.0995-01	5.6777-01	4.5953-01	4.5953-01	4.5953-01
-.600	5.0539-01	5.5074-01	4.6435-01	4.6435-01	4.6435-01
-.500	5.0044-01	5.3748-01	5.5864-01	5.5864-01	5.5864-01
-.400	4.9541-01	5.3275-01	5.5093-01	5.5093-01	5.5093-01
-.300	4.9173-01	5.2916-01	5.4495-01	5.4495-01	5.4495-01
-.200	4.8832-01	5.2630-01	5.4059-01	5.4059-01	5.4059-01
-.100	4.8655-01	5.2644-01	4.4225-01	4.4226-01	4.4225-01
.000	4.8591-01	5.2377-01	5.3689-01	5.3689-01	5.3689-01
.100	4.8655-01	5.2459-01	5.3798-01	5.3798-01	5.3798-01
.200	4.8832-01	5.2630-01	5.4059-01	5.4059-01	5.4059-01
.300	4.9173-01	5.2916-01	5.4495-01	5.4495-01	5.4495-01
.400	4.9541-01	5.3275-01	5.5093-01	5.5093-01	5.5093-01
.500	5.0044-01	5.4420-01	5.5834-01	5.5834-01	4.5834-01
.600	5.0539-01	5.5074-01	4.6435-01	4.6435-01	4.6435-01
.700	5.0955-01	5.5607-01	4.6995-01	4.6995-01	4.6995-01
.800	5.1267-01	5.6161-01	4.7463-01	4.7463-01	4.7463-01
.900	5.1243-01	5.6152-01	4.7469-01	4.7469-01	4.7469-01
1.000	5.0779-01	5.5634-01	4.7013-01	4.7013-01	4.7013-01

ANGULAR DISTRIBUTION OF INELASTICALLY SCATTERED NEUTRONS(.4392 MEV LEVEL)

INCIDENT NEUTRON ENERGY(MEV)

ANGLE (COS)	.458	.500	1.000	1.500	2.000	2.500	3.000	3.500	4.000	4.500
-1.000	5.0035-01	4.9300-01	4.8701-01	4.9860-01	5.0813-01	5.1050-01	5.1427-01	5.2331-01	5.3210-01	5.4249-01
-.900	5.0032-01	4.9525-01	4.9100-01	5.0018-01	5.0730-01	5.0894-01	5.1168-01	5.1901-01	5.2578-01	5.3373-01
-.800	4.9999-01	4.9705-01	4.9429-01	5.0043-01	5.0544-01	5.0632-01	5.0802-01	5.1342-01	5.1785-01	5.2286-01
-.700	4.9997-01	4.9839-01	4.9734-01	5.0048-01	5.0298-01	5.0332-01	5.0411-01	5.0708-01	5.0920-01	5.1173-01
-.600	4.9995-01	4.9975-01	4.9961-01	5.0024-01	5.0057-01	5.0058-01	5.0067-01	5.0150-01	5.0174-01	5.0181-01
-.500	4.9994-01	5.0064-01	5.0168-01	5.0002-01	4.9855-01	4.9836-01	4.9790-01	4.9624-01	4.9493-01	4.9344-01
-.400	4.9992-01	5.0200-01	5.0321-01	4.9992-01	4.9706-01	4.9652-01	4.9554-01	4.9254-01	4.9002-01	4.8714-01
-.300	4.9992-01	5.0244-01	5.0453-01	4.9976-01	4.9604-01	4.9535-01	4.9402-01	4.9007-01	4.8661-01	4.8262-01
-.200	4.9991-01	5.0289-01	5.0549-01	4.9984-01	4.9537-01	4.9444-01	4.9281-01	4.8830-01	4.8428-01	4.7962-01
-.100	4.9990-01	5.0334-01	5.0588-01	4.9978-01	4.9506-01	4.9404-01	4.9224-01	4.8715-01	4.8279-01	4.7784-01
.000	4.9990-01	5.0534-01	5.0607-01	4.9970-01	4.9496-01	4.9378-01	4.9184-01	4.8697-01	4.8245-01	4.7764-01
.100	4.9991-01	5.0334-01	5.0588-01	4.9978-01	4.9506-01	4.9404-01	4.9224-01	4.8715-01	4.8279-01	4.7784-01
.200	4.9991-01	5.0289-01	5.0549-01	4.9984-01	4.9537-01	4.9444-01	4.9281-01	4.8830-01	4.8428-01	4.7962-01
.300	4.9992-01	5.0244-01	5.0453-01	4.9976-01	4.9604-01	4.9535-01	4.9402-01	4.9007-01	4.8661-01	4.8262-01
.400	4.9992-01	5.0200-01	5.0321-01	4.9992-01	4.9706-01	4.9652-01	4.9554-01	4.9254-01	4.9002-01	4.8714-01
.500	4.9994-01	5.0064-01	5.0168-01	5.0002-01	4.9855-01	4.9836-01	4.9790-01	4.9624-01	4.9493-01	4.9344-01
.600	4.9995-01	4.9975-01	4.9961-01	5.0024-01	5.0057-01	5.0058-01	5.0067-01	5.0150-01	5.0930-01	5.0181-01
.700	4.9997-01	4.9839-01	4.9734-01	5.0048-01	5.0298-01	5.0332-01	5.0411-01	5.0708-01	5.1785-01	5.1173-01
.800	4.9999-01	4.9705-01	4.9429-01	5.0043-01	5.0544-01	5.0632-01	5.0802-01	5.1342-01	5.2578-01	5.2286-01
.900	5.0032-01	4.9525-01	4.9100-01	5.0018-01	5.0730-01	5.0894-01	5.1168-01	5.1901-01	5.3369-01	5.3373-01
1.000	5.0035-01	4.9300-01	4.8701-01	4.9860-01	5.0813-01	5.1050-01	5.1427-01	5.2331-01	5.5926-01	5.4249-01

INCIDENT NEUTRON ENERGY(MEV)

ANGLE	5.000	5.500	6.000	6.500	7.000	7.500	8.000	8.500	9.000
-1.000	5.5447-01	5.6545-01	3.0827-01	4.6742-01	8.1474-01	5.8801-01	5.8250-01	5.7291-01	5.5926-01
-.900	5.4282-01	5.5121-01	5.6354-01	5.6815-01	5.6692-01	5.6586-01	5.5897-01	5.4825-01	5.3369-01
-.800	5.2843-01	5.3352-01	5.4267-01	5.4434-01	5.4240-01	5.3683-01	5.2761-01	5.1477-01	4.9831-01
-.700	5.1440-01	5.1667-01	5.2291-01	5.2206-01	5.1781-01	5.1015-01	4.9909-01	4.8463-01	4.6676-01
-.600	5.0172-01	5.0167-01	5.0632-01	5.0372-01	4.9784-01	4.8869-01	4.7627-01	4.6050-01	4.4161-01
-.500	4.9179-01	4.9018-01	4.9301-01	4.8901-01	4.8193-01	4.7179-01	4.5856-01	4.4227-01	4.2290-01
-.400	4.8392-01	4.8099-01	4.8291-01	4.7795-01	4.7002-01	4.5912-01	4.4524-01	4.2839-01	4.0858-01
-.300	4.7809-01	4.7405-01	4.7515-01	4.6937-01	4.6073-01	4.4922-01	4.3485-01	4.1761-01	3.9749-01
-.200	4.7432-01	4.6959-01	4.7007-01	4.6369-01	4.5449-01	4.4265-01	4.2758-01	4.0988-01	3.8935-01
-.100	4.7227-01	4.6715-01	4.6692-01	4.6007-01	4.5044-01	4.3802-01	4.2281-01	4.0483-01	3.8407-01
.000	4.7125-01	4.6588-01	4.6577-01	4.5884-01	4.4911-01	4.3659-01	4.2128-01	4.0317-01	3.8228-01
.100	4.7227-01	4.6715-01	4.6692-01	4.6007-01	4.5044-01	4.3802-01	4.2281-01	4.0483-01	3.8407-01
.200	4.7432-01	4.6959-01	4.7008-01	4.6369-01	4.5448-01	4.4243-01	4.2755-01	4.0982-01	3.8927-01
.300	4.7809-01	4.7405-01	4.7515-01	4.6937-01	4.6073-01	4.4922-01	4.3485-01	4.1761-01	3.9749-01
.400	4.8392-01	4.8099-01	4.8291-01	4.7795-01	4.7002-01	4.5912-01	4.4524-01	4.2839-01	4.0858-01
.500	4.9179-01	4.9018-01	4.9301-01	4.8901-01	4.8193-01	4.7179-01	4.5856-01	4.4227-01	4.2290-01
.600	5.0172-01	5.0167-01	5.0632-01	5.0372-01	4.9784-01	4.8869-01	4.7627-01	4.6058-01	4.4161-01
.700	5.1440-01	5.1667-01	5.2291-01	5.2206-01	5.1781-01	5.1015-01	4.9909-01	4.8463-01	4.6676-01
.800	5.2843-01	5.3352-01	5.4267-01	5.4434-01	5.4240-01	5.3682-01	5.2761-01	5.1477-01	4.9831-01
.900	5.4282-01	5.5121-01	5.6354-01	5.6815-01	5.6692-01	5.6586-01	5.5897-01	5.4825-01	5.3369-01
1.000	5.5447-01	5.6545-01	5.8010-01	5.8681-01	5.8944-01	5.8801-01	5.8250-01	5.7291-01	5.5926-01

ANGULAR DISTRIBUTION OF INELASTICALLY SCATTERED NEUTRONS (2.910 MEV LEVEL)

INCIDENT NEUTRON ENERGY(MEV)

ANGLE (COS)	2.496	2.500	3.000	3.500	4.000	4.500	5.000	5.500	6.000	6.500
-1.000	4.9845-01	4.9422-01	4.9222-01	5.0484-01	5.2037-01	5.4103-01	5.6018-01	5.7947-01	5.9891-01	6.1974-01
-.900	4.9888-01	4.9588-01	4.9468-01	5.0421-01	5.1595-01	5.3166-01	5.4606-01	5.6047-01	5.7491-01	5.9037-01
-.800	4.9934-01	4.9735-01	4.9674-01	5.0308-01	5.1075-01	5.2096-01	5.3014-01	5.3919-01	5.4809-01	5.5799-01
-.700	4.9961-01	4.9864-01	4.9841-01	5.0175-01	5.0562-01	5.1060-01	5.1494-01	5.1909-01	5.2305-01	5.2777-01
-.600	4.9990-01	4.9979-01	4.9979-01	5.0051-01	5.0104-01	5.0143-01	5.0164-01	5.0174-01	5.0167-01	5.0201-01
-.500	5.0022-01	5.0076-01	5.0097-01	4.9941-01	4.9720-01	4.9390-01	4.9089-01	4.8782-01	4.8470-01	4.8156-01
-.400	5.0044-01	5.0151-01	5.0195-01	4.9845-01	4.9406-01	4.8807-01	4.8263-01	4.7722-01	4.7183-01	4.6592-01
-.300	5.0059-01	5.0212-01	5.0264-01	4.9769-01	4.9172-01	4.8380-01	4.7665-01	4.6959-01	4.6262-01	4.5488-01
-.200	5.0073-01	5.0250-01	5.0313-01	4.9718-01	4.9011-01	4.8098-01	4.7270-01	4.6454-01	4.5650-01	4.4749-01
-.100	5.0081-01	5.0276-01	5.0357-01	4.9692-01	4.8920-01	4.7936-01	4.7043-01	4.6163-01	4.5299-01	4.4330-01
.000	5.0084-01	5.0286-01	5.0362-01	4.9683-01	4.8891-01	4.7885-01	4.6971-01	4.6071-01	4.5186-01	4.4193-01
.100	5.0081-01	5.0276-01	5.0352-01	4.9692-01	4.8920-01	4.7936-01	4.7043-01	4.6163-01	4.5299-01	4.4330-01
.200	5.0073-01	5.0250-01	5.0313-01	4.9718-01	4.9011-01	4.8098-01	4.7270-01	4.6454-01	4.5650-01	4.4749-01
.300	5.0059-01	5.0212-01	5.0264-01	4.9769-01	4.9172-01	4.8380-01	4.7665-01	4.6959-01	4.6262-01	4.5488-01
.400	5.0044-01	5.0151-01	5.0195-01	4.9845-01	4.9406-01	4.8807-01	4.8263-01	4.7722-01	4.7183-01	4.6592-01
.500	5.0022-01	5.0076-01	5.0097-01	4.9941-01	4.9720-01	4.9390-01	4.9089-01	4.8782-01	4.8470-01	4.8156-01
.600	4.9990-01	4.9979-01	4.9979-01	5.0051-01	5.0104-01	5.0143-01	5.0164-01	5.0174-01	5.0167-01	5.0201-01
.700	4.9961-01	4.9864-01	4.9841-01	5.0175-01	5.0562-01	5.1060-01	5.1494-01	5.1909-01	5.2305-01	5.2777-01
.800	4.9936-01	4.9735-01	4.9674-01	5.0308-01	5.1075-01	5.2096-01	5.3014-01	5.3919-01	5.4809-01	5.5799-01
.900	4.9888-01	4.9588-01	4.9468-01	5.0421-01	5.1595-01	5.3166-01	5.4606-01	5.6047-01	5.7491-01	5.9037-01
1.000	4.9845-01	4.9422-01	4.9222-01	5.0484-01	5.2037-01	5.4103-01	5.6018-01	5.7947-01	5.9891-01	6.1974-01

INCIDENT NEUTRON ENERGY(MEV)

ANGLE	7.000	7.500	8.000	8.500	9.000
-1.000	6.3875-01	6.5735-01	6.7551-01	6.9322-01	7.1057-01
-.900	6.0423-01	6.1764-01	6.3058-01	6.4308-01	6.5515-01
-.800	5.6596-01	5.7326-01	5.7991-01	5.8589-01	5.9122-01
-.700	5.3076-01	5.3311-01	5.3482-01	5.3589-01	5.3632-01
-.600	5.0131-01	5.0020-01	4.9869-01	4.9677-01	4.9444-01
-.500	4.7830-01	4.7498-01	4.7158-01	4.6811-01	4.6457-01
-.400	4.6608-01	4.5611-01	4.5160-01	4.4736-01	4.4337-01
-.300	4.4861-01	4.4281-01	4.3750-01	4.3269-01	4.2836-01
-.200	4.4034-01	4.3382-01	4.2792-01	4.2265-01	4.1801-01
-.100	4.3564-01	4.2869-01	4.2243-01	4.1687-01	4.1200-01
.000	4.3409-01	4.2696-01	4.2055-01	4.1483-01	4.0983-01
.100	4.3564-01	4.2869-01	4.2243-01	4.1687-01	4.1200-01
.200	4.4034-01	4.3382-01	4.2792-01	4.2265-01	4.1801-01
.300	4.4861-01	4.4281-01	4.3750-01	4.3269-01	4.2836-01
.400	4.6088-01	4.5611-01	4.5160-01	4.4337-01	4.4337-01
.500	4.7830-01	4.7498-01	4.7158-01	4.6811-01	4.6457-01
.600	5.0131-01	5.0020-01	4.9869-01	4.9677-01	4.9444-01
.700	5.3076-01	5.3311-01	5.3482-01	5.3589-01	5.3632-01
.800	5.6596-01	5.7326-01	5.7991-01	5.8589-01	5.9122-01
.900	6.0423-01	6.1764-01	6.3058-01	6.4308-01	6.5515-01
1.000	6.3875-01	6.5735-01	6.7551-01	6.9322-01	7.1057-01

ANGULAR DISTRIBUTION OF INELASTICALLY SCATTERED NEUTRONS(2.6400 MEV LEVEL)

INCIDENT NEUTRON ENERGY(MEV)

ANGLE (COS)	2.756	3.000	3.500	4.000	4.500	5.000	5.500	6.000	6.500	7.000
-1.000	4.9972-01	4.7097-01	4.9792-01	5.2054-01	5.3486-01	5.5284-01	5.7149-01	5.9081-01	6.1343-01	6.3253-01
-.900	4.9967-01	4.7950-01	4.9897-01	5.1560-01	5.2678-01	5.4032-01	5.5428-01	5.6865-01	5.8549-01	5.9947-01
-.800	4.9984-01	4.8697-01	4.9968-01	5.1051-01	5.1785-01	5.2652-01	5.3531-01	5.4424-01	5.5504-01	5.6319-01
-.700	4.9985-01	4.9336-01	4.9997-01	5.0548-01	5.0908-01	5.1323-01	5.1732-01	5.2135-01	5.2658-01	5.2975-01
-.600	5.0007-01	4.9905-01	5.0021-01	5.0103-01	5.0132-01	5.0160-01	5.0174-01	5.0175-01	5.0215-01	5.0157-01
-.500	5.0014-01	5.0367-01	5.0031-01	4.9727-01	4.9493-01	4.9214-01	4.8919-01	4.8608-01	4.8250-01	4.7925-01
-.400	5.0003-01	5.0740-01	5.0039-01	4.9429-01	4.8996-01	4.8485-01	4.7961-01	4.7422-01	4.6774-01	4.6262-01
-.300	5.0013-01	5.1041-01	5.0040-01	4.9191-01	4.8636-01	4.7949-01	4.7261-01	4.6562-01	4.5715-01	4.5074-01
-.200	5.0007-01	5.1255-01	5.0041-01	4.9026-01	4.8376-01	4.7591-01	4.6797-01	4.5992-01	4.5019-01	4.4288-01
-.100	5.0023-01	5.1379-01	5.0042-01	4.8931-01	4.8234-01	4.7387-01	4.6529-01	4.5662-01	4.4611-01	4.3826-01
.000	5.0022-01	5.1415-01	5.0044-01	4.8905-01	4.8190-01	4.7322-01	4.6447-01	4.5562-01	4.4490-01	4.3697-01
.100	5.0023-01	5.1379-01	5.0042-01	4.8931-01	4.8234-01	4.7387-01	4.6529-01	4.5662-01	4.4611-01	4.3828-01
.200	5.0007-01	5.1255-01	5.0041-01	4.9026-01	4.8376-01	4.7591-01	4.6797-01	4.5992-01	4.5019-01	4.4288-01
.300	5.0013-01	5.1041-01	5.0040-01	4.9191-01	4.8636-01	4.7949-01	4.7261-01	4.6562-01	4.5715-01	4.5074-01
.400	5.0003-01	5.0740-01	5.0039-01	4.9429-01	4.8996-01	4.8485-01	4.7961-01	4.7422-01	4.6774-01	4.6262-01
.500	5.0014-01	5.0367-01	5.0031-01	4.9727-01	4.9493-01	4.9214-01	4.8919-01	4.8608-01	4.8250-01	4.7925-01
.600	5.0007-01	4.9905-01	5.0021-01	5.0103-01	5.0132-01	5.0160-01	5.0174-01	5.0175-01	5.0215-01	5.0157-01
.700	4.9985-01	4.9336-01	4.9997-01	5.0548-01	5.0908-01	5.1323-01	5.1732-01	5.2135-01	5.2658-01	5.2975-01
.800	4.9984-01	4.8697-01	4.9968-01	5.1051-01	5.1785-01	5.2652-01	5.3531-01	5.4424-01	5.5504-01	5.6319-01
.900	4.9967-01	4.7950-01	4.9897-01	5.1560-01	5.2678-01	5.4032-01	5.5428-01	5.6865-01	5.8549-01	5.9947-01
1.000	4.9972-01	4.7097-01	4.9792-01	5.2054-01	5.3486-01	5.5284-01	5.7149-01	5.9081-01	6.1343-01	6.3253-01

INCIDENT NEUTRON ENERGY(MEV)

ANGLE	7.500	8.000	8.500	9.000
-1.000	6.5106-01	6.6910-01	6.8650-01	7.0340-01
-.900	6.1289-01	6.2578-01	6.3812-01	6.4993-01
-.800	5.7066-01	5.7745-01	5.8356-01	5.8898-01
-.700	5.3227-01	5.3416-01	5.3540-01	5.3601-01
-.600	5.0063-01	4.9929-01	4.9758-01	4.9549-01
-.500	4.7598-01	4.7270-01	4.6939-01	4.6606-01
-.400	4.5781-01	4.5328-01	4.4905-01	4.4511-01
-.300	4.4484-01	4.3945-01	4.3458-01	4.3022-01
-.200	4.3621-01	4.3018-01	4.2477-01	4.2001-01
-.100	4.3117-01	4.2477-01	4.1909-01	4.1412-01
.000	4.2968-01	4.2309-01	4.1722-01	4.1204-01
.100	4.3117-01	4.2477-01	4.1909-01	4.1412-01
.200	4.3621-01	4.3018-01	4.2477-01	4.2001-01
.300	4.4484-01	4.3945-01	4.3458-01	4.3022-01
.400	4.5781-01	4.5328-01	4.4905-01	4.4511-01
.500	4.7598-01	4.7270-01	4.6939-01	4.6606-01
.600	5.0063-01	4.9929-01	4.9758-01	4.9549-01
.700	5.3227-01	5.3416-01	5.3540-01	5.3601-01
.800	5.7066-01	5.7745-01	5.8356-01	5.8898-01
.900	6.1289-01	6.2578-01	6.3812-01	6.4993-01
1.000	6.5106-01	6.6910-01	6.8650-01	7.0340-01

ANGULAR DISTRIBUTION OF INELASTICALLY SCATTERED NEUTRONS(2.7050 MEV LEVEL)

INCIDENT NEUTRON ENERGY(MEV)

ANGLE (COS)	2.824	3.000	3.500	4.000	4.500	5.000	5.500	6.000	6.500	7.000
-1.000	4.9878-01	4.7098-01	4.4264-01	4.5840-01	4.5384-01	4.5045-01	4.4797-01	4.4643-01	4.4725-01	4.4672-01
-.900	4.9894-01	4.7951-01	4.5971-01	4.7065-01	4.6754-01	4.6556-01	4.6425-01	4.6372-01	4.6514-01	4.6548-01
-.800	4.9943-01	4.8697-01	4.7435-01	4.8151-01	4.7988-01	4.7900-01	4.7869-01	4.7894-01	4.8058-01	4.8150-01
-.700	4.9963-01	4.9337-01	4.8713-01	4.9098-01	4.9050-01	4.9048-01	4.9080-01	4.9147-01	4.9292-01	4.9400-01
-.600	4.9984-01	4.9905-01	4.9836-01	4.9897-01	4.9930-01	4.9988-01	5.0055-01	5.0130-01	5.0226-01	5.0312-01
-.500	5.0007-01	5.0367-01	5.0742-01	5.0554-01	5.0642-01	5.0726-01	5.0798-01	5.0857-01	5.0889-01	5.0933-01
-.400	5.0032-01	5.0740-01	5.1466-01	5.1077-01	5.1197-01	5.1285-01	5.1344-01	5.1373-01	5.1332-01	5.1324-01
-.300	5.0057-01	5.1042-01	5.2041-01	5.1475-01	5.1609-01	5.1690-01	5.1728-01	5.1721-01	5.1610-01	5.1554-01
-.200	5.0054-01	5.1256-01	5.2466-01	5.1753-01	5.1892-01	5.1958-01	5.1973-01	5.1936-01	5.1771-01	5.1675-01
-.100	5.0082-01	5.1380-01	5.2685-01	5.1917-01	5.2057-01	5.2112-01	5.2111-01	5.2053-01	5.1851-01	5.1729-01
-.000	5.0082-01	5.1360-01	5.2685-01	5.1970-01	5.2113-01	5.2160-01	5.2160-01	5.2086-01	5.1879-01	5.1750-01
.100	5.0082-01	5.1380-01	5.2685-01	5.1917-01	5.2057-01	5.2112-01	5.2111-01	5.2053-01	5.1851-01	5.1729-01
.200	5.0054-01	5.1256-01	5.2466-01	5.1753-01	5.1892-01	5.1958-01	5.1973-01	5.1936-01	5.1771-01	5.1675-01
.300	5.0057-01	5.1042-01	5.2041-01	5.1475-01	5.1609-01	5.1690-01	5.1728-01	5.1721-01	5.1610-01	5.1554-01
.400	5.0032-01	5.0740-01	5.1466-01	5.1077-01	5.1197-01	5.1285-01	5.1344-01	5.1373-01	5.1332-01	5.1324-01
.500	5.0007-01	5.0367-01	5.0742-01	5.0554-01	5.0642-01	5.0726-01	5.0798-01	5.0857-01	5.0889-01	5.0933-01
.600	4.9984-01	4.9905-01	4.9836-01	4.9897-01	4.9930-01	4.9988-01	5.0055-01	5.0130-01	5.0226-01	5.0312-01
.700	4.9963-01	4.9337-01	4.8713-01	4.9098-01	4.9050-01	4.9048-01	4.9080-01	4.9147-01	4.9292-01	4.9400-01
.800	4.9943-01	4.8697-01	4.7435-01	4.8151-01	4.7988-01	4.7900-01	4.7869-01	4.7894-01	4.8058-01	4.8150-01
.900	4.9894-01	4.7951-01	4.5971-01	4.7065-01	4.6754-01	4.6556-01	4.6425-01	4.6372-01	4.6514-01	4.6548-01
1.000	4.9878-01	4.7098-01	4.4264-01	4.5840-01	4.5384-01	4.5045-01	4.4797-01	4.4643-01	4.4725-01	4.4672-01

INCIDENT NEUTRON ENERGY(MEV)

ANGLE (COS)	7.500	8.000	8.500	9.000
-1.000	4.4644-01	4.4643-01	4.4668-01	4.4721-01
-.900	4.6606-01	4.6689-01	4.6796-01	4.6927-01
-.800	4.8261-01	4.8393-01	4.8544-01	4.8715-01
-.700	4.9520-01	4.9653-01	4.9800-01	4.9959-01
-.600	5.0402-01	5.0495-01	5.0593-01	5.0693-01
-.500	5.0972-01	5.1006-01	5.1035-01	5.1058-01
-.400	5.1305-01	5.1274-01	5.1231-01	5.1177-01
-.300	5.1482-01	5.1395-01	5.1294-01	5.1177-01
-.200	5.1562-01	5.1433-01	5.1286-01	5.1123-01
-.100	5.1592-01	5.1438-01	5.1267-01	5.1079-01
-.000	5.1603-01	5.1439-01	5.1257-01	5.1058-01
.100	5.1592-01	5.1438-01	5.1267-01	5.1079-01
.200	5.1562-01	5.1433-01	5.1286-01	5.1123-01
.300	5.1482-01	5.1395-01	5.1294-01	5.1177-01
.400	5.1305-01	5.1274-01	5.1231-01	5.1177-01
.500	5.0972-01	5.1006-01	5.1035-01	5.1058-01
.600	5.0402-01	5.0495-01	5.0593-01	5.0693-01
.700	4.9520-01	4.9653-01	4.9800-01	4.9959-01
.800	4.8261-01	4.8393-01	4.8544-01	4.8715-01
.900	4.6606-01	4.6689-01	4.6796-01	4.6927-01
1.000	4.4644-01	4.4643-01	4.4668-01	4.4721-01

ANGULAR DISTRIBUTION OF INELASTICALLY SCATTERED NEUTRONS (2.9840 MEV LEVEL)

INCIDENT NEUTRON ENERGY(MEV)

ANGLE (COS)	3.115	3.000	3.500	4.000	4.500	5.000	5.500	6.000	6.500	7.000
-1.000	5.0330-01	5.0450-01	5.4602-01	5.6759-01	5.7097-01	5.8277-01	5.9970-01	6.1500-01	6.3102-01	6.4780-01
-.900	5.0240-01	5.0325-01	5.3260-01	5.4730-01	5.4837-01	5.5484-01	5.6374-01	5.7176-01	5.8002-01	5.8853-01
-.800	5.0154-01	5.0208-01	5.2089-01	5.2985-01	5.2978-01	5.3288-01	5.3685-01	5.4055-01	5.4438-01	5.4832-01
-.700	5.0081-01	5.0108-01	5.1056-01	5.1485-01	5.1437-01	5.1533-01	5.1631-01	5.1735-01	5.1844-01	5.1959-01
-.600	5.0012-01	5.0017-01	5.0164-01	5.0207-01	5.0153-01	5.0103-01	5.0011-01	4.9938-01	4.9863-01	4.9785-01
-.500	4.9956-01	4.9941-01	4.9418-01	4.9143-01	4.9096-01	4.8943-01	4.8730-01	4.8534-01	4.8327-01	4.8110-01
-.400	4.9914-01	4.9883-01	4.8812-01	4.8281-01	4.8244-01	4.8012-01	4.7704-01	4.7418-01	4.7114-01	4.6797-01
-.300	4.9876-01	4.9833-01	4.8340-01	4.7615-01	4.7589-01	4.7300-01	4.6917-01	4.6560-01	4.6188-01	4.5802-01
-.200	4.9851-01	4.9800-01	4.8002-01	4.7135-01	4.7117-01	4.6786-01	4.6348-01	4.5946-01	4.5530-01	4.5101-01
-.100	4.9839-01	4.9783-01	4.7801-01	4.6835-01	4.6835-01	4.6480-01	4.6006-01	4.5578-01	4.5139-01	4.4688-01
.000	4.9833-01	4.9775-01	4.7733-01	4.6753-01	4.6744-01	4.6380-01	4.5889-01	4.5451-01	4.5003-01	4.4545-01
.100	4.9839-01	4.9783-01	4.7801-01	4.6835-01	4.6835-01	4.6480-01	4.6006-01	4.5578-01	4.5139-01	4.4688-01
.200	4.9851-01	4.9800-01	4.8002-01	4.7135-01	4.7117-01	4.6786-01	4.6348-01	4.5946-01	4.5530-01	4.5101-01
.300	4.9876-01	4.9833-01	4.8340-01	4.7613-01	4.7589-01	4.7300-01	4.6917-01	4.6560-01	4.6188-01	4.5802-01
.400	4.9914-01	4.9883-01	4.8812-01	4.8281-01	4.8244-01	4.8012-01	4.7704-01	4.7418-01	4.7114-01	4.6797-01
.500	4.9956-01	4.9941-01	4.9418-01	4.9143-01	4.9096-01	4.8943-01	4.8730-01	4.8534-01	4.8327-01	4.8110-01
.600	5.0012-01	5.0017-01	5.0164-01	5.0207-01	5.0153-01	5.0103-01	5.0011-01	4.9938-01	4.9863-01	4.9785-01
.700	5.0081-01	5.0108-01	5.1056-01	5.1485-01	5.1437-01	5.1533-01	5.1631-01	5.1735-01	5.1844-01	5.1959-01
.800	5.0154-01	5.0208-01	5.2089-01	5.2985-01	5.2978-01	5.3288-01	5.3685-01	5.4055-01	5.4438-01	5.4832-01
.900	5.0240-01	5.0325-01	5.3260-01	5.4730-01	5.4837-01	5.5484-01	5.6374-01	5.7176-01	5.8002-01	5.8853-01
1.000	5.0330-01	5.0450-01	5.4602-01	5.6759-01	5.7097-01	5.8277-01	5.9970-01	6.1500-01	6.3102-01	6.4780-01

INCIDENT NEUTRON ENERGY(MEV)

ANGLE (COS)	7.500	8.000	8.500	9.000
-1.000	6.6526-01	6.8342-01	7.0233-01	7.2200-01
-.900	5.9730-01	6.0633-01	6.1560-01	6.2513-01
-.800	5.5239-01	5.5659-01	5.6091-01	5.6535-01
-.700	5.2078-01	5.2203-01	5.2331-01	5.2466-01
-.600	4.9704-01	4.9621-01	4.9536-01	4.9449-01
-.500	4.7883-01	4.7645-01	4.7397-01	4.7139-01
-.400	4.6464-01	4.6117-01	4.5755-01	4.5379-01
-.300	4.5400-01	4.4983-01	4.4551-01	4.4103-01
-.200	4.4658-01	4.4202-01	4.3731-01	4.3247-01
-.100	4.4226-01	4.3752-01	4.3268-01	4.2772-01
.000	4.4077-01	4.3598-01	4.3111-01	4.2615-01
.100	4.4226-01	4.3752-01	4.3268-01	4.2772-01
.200	4.4658-01	4.4202-01	4.3731-01	4.3247-01
.300	4.5400-01	4.4983-01	4.4551-01	4.4103-01
.400	4.6464-01	4.6117-01	4.5755-01	4.5379-01
.500	4.7883-01	4.7645-01	4.7397-01	4.7139-01
.600	4.9704-01	4.9621-01	4.9536-01	4.9449-01
.700	5.2078-01	5.2203-01	5.2331-01	5.2466-01
.800	5.5239-01	5.5659-01	5.6091-01	5.6535-01
.900	5.9730-01	6.0633-01	6.1560-01	6.2513-01
1.000	6.6526-01	6.8342-01	7.0233-01	7.2200-01

ANGULAR DISTRIBUTION OF INELASTICALLY SCATTERED NEUTRONS (9.6700 MEV LEVEL)

INCIDENT NEUTRON ENERGY(MEV)

ANGLE (COS)	3.839	4.000	4.500	5.000	5.500	6.000	6.500	7.000	7.500	8.000
-1.000	5.0465-01	5.2957-01	5.6144-01	5.8441-01	5.8109-01	5.9490-01	6.0910-01	6.2453-01	6.4120-01	6.5904-01
-.900	5.0333-01	5.2106-01	5.4319-01	5.5034-01	5.5414-01	5.6111-01	5.6064-01	5.7673-01	5.8537-01	5.9457-01
-.800	5.0220-01	5.1350-01	5.2734-01	5.3637-01	5.3229-01	5.3560-01	5.3917-01	5.4301-01	5.4710-01	5.5145-01
-.700	5.0113-01	5.0606-01	5.1372-01	5.1790-01	5.1491-01	5.1509-01	5.1694-01	5.1812-01	5.1936-01	5.2070-01
-.600	5.0025-01	5.0110-01	5.0194-01	5.0220-01	5.0091-01	5.0036-01	4.9975-01	4.9908-01	4.9836-01	4.9750-01
-.500	4.9943-01	4.9624-01	4.9216-01	4.8921-01	4.8049-01	4.8703-01	4.8599-01	4.8398-01	4.8101-01	4.7948-01
-.400	4.9880-01	4.9234-01	4.8432-01	4.7804-01	4.7340-01	4.7791-01	4.7523-01	4.7226-01	4.6905-01	4.6561-01
-.300	4.9825-01	4.8929-01	4.7820-01	4.7070-01	4.6842-01	4.7035-01	4.6694-01	4.6330-01	4.5936-01	4.5515-01
-.200	4.9789-01	4.8710-01	4.7380-01	4.6497-01	4.6535-01	4.6400-01	4.6104-01	4.5694-01	4.5255-01	4.4707-01
-.100	4.9772-01	4.8579-01	4.7110-01	4.6141-01	4.6431-01	4.6156-01	4.5750-01	4.5314-01	4.4850-01	4.4357-01
.000	4.9762-01	4.8535-01	4.7025-01	4.6027-01	4.6341-01	4.6043-01	4.5628-01	4.5184-01	4.4712-01	4.4212-01
.100	4.9772-01	4.8579-01	4.7110-01	4.6141-01	4.6431-01	4.6156-01	4.5750-01	4.5314-01	4.4850-01	4.4357-01
.200	4.9789-01	4.8710-01	4.7380-01	4.6497-01	4.6535-01	4.6400-01	4.6104-01	4.5694-01	4.5255-01	4.4707-01
.300	4.9825-01	4.8929-01	4.7820-01	4.7070-01	4.6842-01	4.7035-01	4.6694-01	4.6330-01	4.5936-01	4.5515-01
.400	4.9880-01	4.9234-01	4.8432-01	4.7804-01	4.7340-01	4.7790-01	4.7523-01	4.7226-01	4.6905-01	4.6561-01
.500	4.9943-01	4.9624-01	4.9216-01	4.8921-01	4.8951-01	4.8703-01	4.8599-01	4.8398-01	4.8101-01	4.7948-01
.600	5.0025-01	5.0110-01	5.0194-01	5.0220-01	5.0091-01	5.0036-01	4.9975-01	4.9908-01	4.9836-01	4.9750-01
.700	5.0113-01	5.0606-01	5.1372-01	5.1790-01	5.1491-01	5.1509-01	5.1694-01	5.1812-01	5.1936-01	5.2070-01
.800	5.0220-01	5.1350-01	5.2734-01	5.3637-01	5.3229-01	5.3560-01	5.3917-01	5.4301-01	5.4710-01	5.5145-01
.900	5.0333-01	5.2106-01	5.4319-01	5.5034-01	5.5414-01	5.6111-01	5.6064-01	5.7673-01	5.8537-01	5.9457-01
1.000	5.0465-01	5.2957-01	5.6144-01	5.8441-01	5.8109-01	5.9490-01	6.0910-01	6.2453-01	6.4120-01	6.5904-01

INCIDENT NEUTRON ENERGY(MEV)

ANGLE	8.500	9.000
-1.000	6.7814-01	6.9844-01
-.900	6.0432-01	6.1463-01
-.800	5.5606-01	5.6093-01
-.700	5.2212-01	5.2363-01
-.600	4.9674-01	4.9584-01
-.500	4.7698-01	4.7432-01
-.400	4.6193-01	4.5803-01
-.300	4.5066-01	4.4591-01
-.200	4.4290-01	4.3765-01
-.100	4.3835-01	4.3285-01
.000	4.3684-01	4.3122-01
.100	4.3835-01	4.3285-01
.200	4.4290-01	4.3765-01
.300	4.5066-01	4.4591-01
.400	4.6193-01	4.5803-01
.500	4.7698-01	4.7432-01
.600	4.9674-01	4.9584-01
.700	5.2212-01	5.2363-01
.800	5.5606-01	5.6093-01
.900	6.0432-01	6.1463-01
1.000	6.7814-01	6.9844-01

A-84

ANGULAR DISTRIBUTION OF INELASTICALLY SCATTERED NEUTRONS(3.05n0 MEV LEVEL)

INCIDENT NEUTRON ENERGY(MEV)

ANGLE (COS)	4.019	4.000	4.500	5.000	5.500	6.000	6.50n	7.000	7.500	8.000
-1.000	5.0030-01	5.0380-01	5.1468-01	5.2418-01	5.3231-01	5.3612-01	5.4553-01	5.5325-01	5.6126-01	5.6958-01
-.900	5.0018-01	5.0270-01	5.1061-01	5.1770-01	5.2397-01	5.2886-01	5.3468-01	5.4066-01	5.4679-01	5.5307-01
-.800	5.0024-01	5.0187-01	5.0702-01	5.1166-01	5.1581-01	5.1914-01	5.2293-01	5.2675-01	5.3060-01	5.3449-01
-.700	5.0010-01	5.0096-01	5.0367-01	5.0609-01	5.0822-01	5.0992-01	5.1178-01	5.1359-01	5.1537-01	5.1709-01
-.600	4.9997-01	5.0015-01	5.0069-01	5.0113-01	5.0149-01	5.0174-01	5.0195-01	5.0208-01	5.0215-01	5.0215-01
-.500	5.0001-01	4.9959-01	4.9825-01	4.9699-01	4.9583-01	4.9403-01	4.9368-01	4.9248-01	4.9123-01	4.8993-01
-.400	4.9987-01	4.9895-01	4.9608-01	4.9348-01	4.9116-01	4.8930-01	4.8714-01	4.8495-01	4.8271-01	4.8043-01
-.300	4.9988-01	4.9859-01	4.9452-01	4.9087-01	4.8766-01	4.8514-01	4.8222-01	4.7927-01	4.7628-01	4.7327-01
-.200	4.9990-01	4.9832-01	4.9337-01	4.8898-01	4.8516-01	4.8225-01	4.7884-01	4.7538-01	4.7189-01	4.6837-01
-.100	4.9992-01	4.9815-01	4.9265-01	4.8781-01	4.8364-01	4.8051-01	4.7680-01	4.7305-01	4.6925-01	4.6541-01
.000	4.9992-01	4.9810-01	4.9243-01	4.8745-01	4.8315-01	4.7994-01	4.7612-01	4.7226-01	4.6836-01	4.6442-01
.100	4.9992-01	4.9815-01	4.9265-01	4.8781-01	4.8364-01	4.8051-01	4.7680-01	4.7305-01	4.6925-01	4.6541-01
.200	4.9990-01	4.9832-01	4.9337-01	4.8898-01	4.8516-01	4.8225-01	4.7884-01	4.7538-01	4.7189-01	4.6837-01
.300	4.9988-01	4.9859-01	4.9452-01	4.9087-01	4.8766-01	4.8514-01	4.8222-01	4.7927-01	4.7628-01	4.7327-01
.400	4.9987-01	4.9895-01	4.9608-01	4.9348-01	4.9116-01	4.8930-01	4.8714-01	4.8495-01	4.8271-01	4.8043-01
.500	5.0001-01	4.9959-01	4.9825-01	4.9699-01	4.9583-01	4.9483-01	4.9368-01	4.9248-01	4.9123-01	4.8993-01
.600	4.9997-01	5.0015-01	5.0069-01	5.0113-01	5.0149-01	5.0174-01	5.0195-01	5.0208-01	5.0215-01	5.0215-01
.700	5.0010-01	5.0096-01	5.0367-01	5.0609-01	5.0822-01	5.0992-01	5.1178-01	5.1359-01	5.1537-01	5.1709-01
.800	5.0024-01	5.0187-01	5.0702-01	5.1166-01	5.1581-01	5.1914-01	5.2293-01	5.2675-01	5.3060-01	5.3449-01
.900	5.0018-01	5.0270-01	5.1061-01	5.1770-01	5.2397-01	5.2886-01	5.3468-01	5.4066-01	5.4679-01	5.5307-01
1.000	4.9924-01	5.0293-01	5.1434-01	5.2418-01	5.3246-01	5.3612-01	5.4553-01	5.5325-01	5.6126-01	5.6958-01

INCIDENT NEUTRON ENERGY(MEV)

ANGLE (COS)	8.500	9.000
-1.000	5.7820-01	5.8711-01
-.900	5.5952-01	5.6611-01
-.800	5.3841-01	5.4236-01
-.700	5.1878-01	5.2042-01
-.600	5.0209-01	5.0195-01
-.500	4.8859-01	4.8719-01
-.400	4.7811-01	4.7575-01
-.300	4.7023-01	4.6715-01
-.200	4.6482-01	4.6123-01
-.100	4.6153-01	4.5760-01
.000	4.6044-01	4.5641-01
.100	4.6153-01	4.5760-01
.200	4.6482-01	4.6123-01
.300	4.7023-01	4.6715-01
.400	4.7811-01	4.7575-01
.500	4.8859-01	4.8719-01
.600	5.0209-01	5.0195-01
.700	5.1878-01	5.2042-01
.800	5.3841-01	5.4236-01
.900	5.5952-01	5.6611-01
1.000	5.7820-01	5.8711-01

ANGULAR DISTRIBUTION OF INELASTICALLY SCATTERED NEUTRONS (5.0150 MEV LEVEL)

INCIDENT NEUTRON ENERGY(MEV)

ANGLE (COS)	4.087	4.000	4.500	5.000	5.500	6.000	6.500	7.000	7.500	8.000
-1.000	5.0031-01	5.0240-01	5.1390-01	5.2377-01	5.3200-01	5.3753-01	5.4484-01	5.5253-01	5.6050-01	5.6877-01
-.900	5.0007-01	5.0160-01	5.1005-01	5.1745-01	5.2377-01	5.2834-01	5.3406-01	5.3998-01	5.4608-01	5.5237-01
-.800	5.0009-01	5.0108-01	5.0656-01	5.1141-01	5.1562-01	5.1885-01	5.2262-01	5.2642-01	5.3026-01	5.3413-01
-.700	5.0012-01	5.0063-01	5.0345-01	5.0593-01	5.0809-01	5.0975-01	5.1160-01	5.1342-01	5.1519-01	5.1692-01
-.600	5.0014-01	5.0023-01	5.0071-01	5.0112-01	5.0146-01	5.0172-01	5.0193-01	5.0206-01	5.0215-01	5.0216-01
-.500	4.9980-01	4.9964-01	4.9824-01	4.9697-01	4.9584-01	4.9495-01	4.9385-01	4.9267-01	4.9143-01	4.9013-01
-.400	4.9990-01	4.9936-01	4.9635-01	4.9366-01	4.9131-01	4.8949-01	4.8734-01	4.8515-01	4.8292-01	4.8065-01
-.300	4.9992-01	4.9913-01	4.9481-01	4.9102-01	4.8778-01	4.8538-01	4.8250-01	4.7950-01	4.7660-01	4.7360-01
-.200	4.9993-01	4.9897-01	4.9370-01	4.8914-01	4.8527-01	4.8252-01	4.7914-01	4.7571-01	4.7224-01	4.6872-01
-.100	4.9993-01	4.9885-01	4.9310-01	4.8810-01	4.8386-01	4.8084-01	4.7714-01	4.7339-01	4.6961-01	4.6577-01
.000	4.9993-01	4.9888-01	4.9288-01	4.8772-01	4.8336-01	4.8025-01	4.7645-01	4.7261-01	4.6873-01	4.6481-01
.100	4.9993-01	4.9888-01	4.9310-01	4.8810-01	4.8386-01	4.8084-01	4.7714-01	4.7335-01	4.6961-01	4.6577-01
.200	4.9992-01	4.9897-01	4.9374-01	4.8914-01	4.8527-01	4.8252-01	4.7914-01	4.7571-01	4.7224-01	4.6872-01
.300	4.9992-01	4.9913-01	4.9481-01	4.9102-01	4.8778-01	4.8538-01	4.8250-01	4.7958-01	4.7660-01	4.7360-01
.400	4.9990-01	4.9936-01	4.9635-01	4.9366-01	4.9131-01	4.8949-01	4.8734-01	4.8515-01	4.8292-01	4.8065-01
.500	4.9988-01	4.9964-01	4.9824-01	4.9697-01	4.9584-01	4.9495-01	4.9385-01	4.9267-01	4.9143-01	4.9013-01
.600	5.0014-01	5.0023-01	5.0071-01	5.0112-01	5.0146-01	5.0172-01	5.0193-01	5.0206-01	5.0215-01	5.0216-01
.700	5.0012-01	5.0063-01	5.0345-01	5.0593-01	5.0809-01	5.0975-01	5.1160-01	5.1342-01	5.1519-01	5.1692-01
.800	5.0009-01	5.0108-01	5.0656-01	5.1141-01	5.1562-01	5.1885-01	5.2262-01	5.2642-01	5.3026-01	5.3413-01
.900	5.0007-01	5.0160-01	5.1005-01	5.1745-01	5.2377-01	5.2834-01	5.3406-01	5.3998-01	5.4608-01	5.5237-01
1.000	5.0031-01	5.0240-01	5.1390-01	5.2377-01	5.3200-01	5.3753-01	5.4484-01	5.5253-01	5.6050-01	5.6877-01

INCIDENT NEUTRON ENERGY(MEV)

ANGLE (COS)	8.500	9.000
-1.000	5.7736-01	5.8625-01
-.900	5.5884-01	5.6550-01
-.800	5.3803-01	5.4197-01
-.700	5.1861-01	5.2027-01
-.600	5.0211-01	5.0200-01
-.500	4.8876-01	4.8732-01
-.400	4.7834-01	4.7598-01
-.300	4.7054-01	4.6745-01
-.200	4.6516-01	4.6154-01
-.100	4.6188-01	4.5796-01
.000	4.6085-01	4.5684-01
.100	4.6188-01	4.5796-01
.200	4.6516-01	4.6154-01
.300	4.7054-01	4.6745-01
.400	4.7834-01	4.7598-01
.500	4.8876-01	4.8732-01
.600	5.0211-01	5.0200-01
.700	5.1861-01	5.2027-01
.800	5.3803-01	5.4197-01
.900	5.5884-01	5.6550-01
1.000	5.7736-01	5.8625-01

ANGULAR DISTRIBUTION OF INELASTICALLY SCATTERED NEUTRONS (4.4310 MEV LEVEL)

INCIDENT NEUTRON ENERGY(MEV)

ANGLE (COS)	4.625	4.500	5.000	5.500	6.000	6.500	7.000	7.500	8.000	8.500
-1.000	5.0101-01	5.0265-01	5.1474-01	5.2912-01	5.4581-01	5.6479-01	5.8608-01	6.0967-01	6.3554-01	6.6376-01
-.900	5.0074-01	5.0194-01	5.1071-01	5.2093-01	5.3259-01	5.4571-01	5.6028-01	5.7630-01	5.9377-01	6.1268-01
-.800	5.0046-01	5.0124-01	5.0698-01	5.1342-01	5.2056-01	5.2840-01	5.3693-01	5.4617-01	5.5610-01	5.6673-01
-.700	5.0015-01	5.0058-01	5.0363-01	5.0680-01	5.1007-01	5.1345-01	5.1693-01	5.2052-01	5.2422-01	5.2803-01
-.600	4.9983-01	4.9993-01	5.0060-01	5.0099-01	5.0108-01	5.0090-01	5.0041-01	4.9963-01	4.9857-01	4.9722-01
-.500	4.9992-01	4.9971-01	4.9820-01	4.9615-01	4.9368-01	4.9069-01	4.8719-01	4.8321-01	4.7873-01	4.7376-01
-.400	4.9955-01	4.9914-01	4.9605-01	4.9235-01	4.8803-01	4.8311-01	4.7754-01	4.7140-01	4.6463-01	4.5723-01
-.300	4.9961-01	4.9899-01	4.9446-01	4.8933-01	4.8360-01	4.7726-01	4.7033-01	4.6280-01	4.5466-01	4.4593-01
-.200	4.9965-01	4.9888-01	4.9336-01	4.8727-01	4.8061-01	4.7339-01	4.6561-01	4.5727-01	4.4835-01	4.3887-01
-.100	4.9966-01	4.9882-01	4.9271-01	4.8606-01	4.7889-01	4.7120-01	4.6290-01	4.5423-01	4.4496-01	4.3516-01
.000	4.9967-01	4.9880-01	4.9245-01	4.8560-01	4.7824-01	4.7038-01	4.6202-01	4.5314-01	4.4377-01	4.3389-01
.100	4.9966-01	4.9882-01	4.9271-01	4.8606-01	4.7889-01	4.7120-01	4.6290-01	4.5423-01	4.4496-01	4.3516-01
.200	4.9965-01	4.9888-01	4.9336-01	4.8727-01	4.8061-01	4.7339-01	4.6561-01	4.5727-01	4.4835-01	4.3887-01
.300	4.9961-01	4.9899-01	4.9446-01	4.8933-01	4.8360-01	4.7726-01	4.7033-01	4.6280-01	4.5466-01	4.4593-01
.400	4.9955-01	4.9914-01	4.9605-01	4.9235-01	4.8803-01	4.8311-01	4.7754-01	4.7140-01	4.6463-01	4.5723-01
.500	4.9992-01	4.9971-01	4.9820-01	4.9619-01	4.9368-01	4.9069-01	4.8719-01	4.8321-01	4.7873-01	4.7376-01
.600	4.9983-01	4.9993-01	5.0060-01	5.0099-01	5.0108-01	5.0090-01	5.0041-01	4.9963-01	4.9857-01	4.9722-01
.700	5.0015-01	5.0058-01	5.0363-01	5.0680-01	5.1007-01	5.1345-01	5.1693-01	5.2052-01	5.2422-01	5.2803-01
.800	5.0046-01	5.0124-01	5.0698-01	5.1342-01	5.2056-01	5.2840-01	5.3693-01	5.4617-01	5.5610-01	5.6673-01
.900	5.0074-01	5.0194-01	5.1071-01	5.2093-01	5.3259-01	5.4571-01	5.6028-01	5.7630-01	5.9377-01	6.1268-01
1.000	5.0101-01	5.0265-01	5.1474-01	5.2912-01	5.4581-01	5.6479-01	5.8608-01	6.0967-01	6.3554-01	6.6376-01

INCIDENT NEUTRON ENERGY(MEV)

ANGLE	9.000
-1.000	6.9423-01
-.900	6.3303-01
-.800	5.7806-01
-.700	5.3193-01
-.600	4.9557-01
-.500	4.6830-01
-.400	4.4923-01
-.300	4.3659-01
-.200	4.2883-01
-.100	4.2484-01
.000	4.2351-01
.100	4.2484-01
.200	4.2883-01
.300	4.3659-01
.400	4.4923-01
.500	4.6830-01
.600	4.9557-01
.700	5.3193-01
.800	5.7806-01
.900	6.3303-01
1.000	6.9423-01

A-87

ANGULAR DISTRIBUTION OF INELASTICALLY SCATTERED NEUTRONS(4.7780 MEV LEVEL)

INCIDENT NEUTRON ENERGY(MEV)

ANGLE (COS)	4.988	5.000	5.500	6.000	6.500	7.000	7.500	8.000	8.500	9.000
-1.000	5.0087-01	5.0620-01	5.1769-01	5.2838-01	5.3828-01	5.4738-01	5.5570-01	5.6321-01	5.6993-01	5.7585-01
-.900	5.0065-01	5.0453-01	5.1292-01	5.2081-01	5.2816-01	5.3501-01	5.4134-01	5.4715-01	5.5245-01	5.5722-01
-.800	5.0042-01	5.0298-01	5.0851-01	5.1368-01	5.1847-01	5.2289-01	5.2695-01	5.3065-01	5.3397-01	5.3692-01
-.700	5.0019-01	5.0154-01	5.0443-01	5.0710-01	5.0952-01	5.1172-01	5.1369-01	5.1543-01	5.1694-01	5.1821-01
-.600	4.9995-01	5.0022-01	5.0078-01	5.0124-01	5.0161-01	5.0189-01	5.0208-01	5.0218-01	5.0218-01	5.0210-01
-.500	5.0000-01	4.9932-01	4.9785-01	4.9643-01	4.9506-01	4.9375-01	4.9249-01	4.9129-01	4.9015-01	4.8906-01
-.400	4.9974-01	4.9833-01	4.9528-01	4.9239-01	4.8969-01	4.8717-01	4.8482-01	4.8264-01	4.8064-01	4.7882-01
-.300	4.9976-01	4.9775-01	4.9339-01	4.8932-01	4.8556-01	4.8210-01	4.7895-01	4.7609-01	4.7353-01	4.7128-01
-.200	4.9949-01	4.9708-01	4.9187-01	4.8704-01	4.8259-01	4.7851-01	4.7481-01	4.7149-01	4.6854-01	4.6597-01
-.100	4.9951-01	4.9682-01	4.9106-01	4.8573-01	4.8085-01	4.7638-01	4.7234-01	4.6877-01	4.6562-01	4.6289-01
.000	4.9951-01	4.9675-01	4.9084-01	4.8537-01	4.8034-01	4.7576-01	4.7162-01	4.6793-01	4.6467-01	4.6187-01
.100	4.9951-01	4.9682-01	4.9106-01	4.8573-01	4.8085-01	4.7638-01	4.7234-01	4.6877-01	4.6562-01	4.6289-01
.200	4.9949-01	4.9708-01	4.9187-01	4.8704-01	4.8259-01	4.7851-01	4.7481-01	4.7149-01	4.6854-01	4.6597-01
.300	4.9976-01	4.9775-01	4.9339-01	4.8932-01	4.8556-01	4.8210-01	4.7895-01	4.7609-01	4.7353-01	4.7128-01
.400	4.9974-01	4.9833-01	4.9528-01	4.9239-01	4.8969-01	4.8717-01	4.8482-01	4.8264-01	4.8064-01	4.7882-01
.500	5.0000-01	4.9932-01	4.9785-01	4.9506-01	4.9506-01	4.9375-01	4.9249-01	4.9129-01	4.9015-01	4.8906-01
.600	4.9995-01	5.0022-01	5.0078-01	5.0124-01	5.0161-01	5.0189-01	5.0208-01	5.0218-01	5.0218-01	5.0210-01
.700	5.0019-01	5.0154-01	5.0443-01	5.0710-01	5.0952-01	5.1172-01	5.1369-01	5.1543-01	5.1694-01	5.1821-01
.800	5.0042-01	5.0298-01	5.0851-01	5.1368-01	5.1847-01	5.2289-01	5.2695-01	5.3065-01	5.3397-01	5.3692-01
.900	5.0065-01	5.0453-01	5.1292-01	5.2081-01	5.2816-01	5.3501-01	5.4134-01	5.4715-01	5.5245-01	5.5722-01
1.000	5.0087-01	5.0620-01	5.1769-01	5.2838-01	5.3828-01	5.4738-01	5.5570-01	5.6321-01	5.6993-01	5.7585-01

ANGULAR DISTRIBUTION OF INELASTICALLY SCATTERED NEUTRONS (6.5000 MEV LEVEL)

INCIDENT NEUTRON ENERGY(MEV)

ANGLE (COS)	6.545	6.500	7.000	7.500	8.000	8.500	9.000
-1.000	5.0112-01	5.0463-01	5.1476-01	5.2901-01	5.4739-01	5.6989-01	5.9651-01
-.900	5.0081-01	5.0336-01	5.1073-01	5.2111-01	5.3450-01	5.5090-01	5.7030-01
-.800	5.0049-01	5.0210-01	5.0676-01	5.1332-01	5.2179-01	5.3217-01	5.4444-01
-.700	5.0030-01	5.0107-01	5.0328-01	5.0639-01	5.1038-01	5.1528-01	5.2106-01
-.600	5.0010-01	5.0015-01	5.0029-01	5.0047-01	5.0068-01	5.0094-01	5.0123-01
-.500	4.9988-01	4.9935-01	4.9782-01	4.9569-01	4.9295-01	4.8960-01	4.8564-01
-.400	4.9965-01	4.9869-01	4.9592-01	4.9202-01	4.8701-01	4.8086-01	4.7360-01
-.300	4.9954-01	4.9826-01	4.9459-01	4.8943-01	4.8280-01	4.7469-01	4.6510-01
-.200	4.9956-01	4.9809-01	4.9382-01	4.8778-01	4.7998-01	4.7041-01	4.5907-01
-.100	4.9944-01	4.9784-01	4.9322-01	4.8672-01	4.7833-01	4.6805-01	4.5589-01
.000	4.9944-01	4.9781-01	4.9308-01	4.8641-01	4.7782-01	4.6729-01	4.5483-01
.100	4.9956-01	4.9784-01	4.9322-01	4.8672-01	4.7833-01	4.6805-01	4.5589-01
.200	4.9954-01	4.9809-01	4.9382-01	4.8778-01	4.7998-01	4.7041-01	4.5907-01
.300	4.9965-01	4.9826-01	4.9459-01	4.8943-01	4.8280-01	4.7469-01	4.6510-01
.400	4.9988-01	4.9869-01	4.9592-01	4.9202-01	4.8701-01	4.8086-01	4.7360-01
.500	5.0010-01	4.9935-01	4.9782-01	4.9569-01	4.9295-01	4.8960-01	4.8564-01
.600	5.0030-01	5.0015-01	5.0029-01	5.0047-01	5.0068-01	5.0094-01	5.0123-01
.700	5.0049-01	5.0107-01	5.0328-01	5.0639-01	5.1038-01	5.1528-01	5.2106-01
.800	5.0081-01	5.0210-01	5.0676-01	5.1332-01	5.2179-01	5.3217-01	5.4444-01
.900	5.0112-01	5.0336-01	5.1073-01	5.2111-01	5.3450-01	5.5090-01	5.7030-01
1.000	5.0112-01	5.0463-01	5.1476-01	5.2901-01	5.4739-01	5.6989-01	5.9651-01

ANGULAR DISTRIBUTION OF INELASTICALLY SCATTERED NEUTRONS(7.1100 MEV LEVEL)

INCIDENT NEUTRON ENERGY(MEV)

ANGLE (COS)	7.422	7.500	8.000	8.500	9.000
-1.000	5.0086-01	5.0581-01	5.1660-01	5.3048-01	5.4747-01
-.900	5.0059-01	5.0419-01	5.1204-01	5.2214-01	5.3449-01
-.800	5.0039-01	5.0271-01	5.0776-01	5.1427-01	5.2223-01
-.700	5.0017-01	5.0135-01	5.0391-01	5.0720-01	5.1123-01
-.600	5.0005-01	5.0025-01	5.0068-01	5.0121-01	5.0186-01
-.500	4.9988-01	4.9922-01	4.9780-01	4.9597-01	4.9375-01
-.400	4.9972-01	4.9850-01	4.9563-01	4.9195-01	4.8744-01
-.300	4.9963-01	4.9788-01	4.9386-01	4.8870-01	4.8239-01
-.200	4.9959-01	4.9744-01	4.9266-01	4.8650-01	4.7896-01
-.100	4.9959-01	4.9719-01	4.9195-01	4.8522-01	4.7694-01
0.000	4.9963-01	4.9711-01	4.9172-01	4.8476-01	4.7626-01
.100	4.9972-01	4.9719-01	4.9195-01	4.8522-01	4.7694-01
.200	4.9980-01	4.9744-01	4.9266-01	4.8650-01	4.7896-01
.300	4.9988-01	4.9788-01	4.9386-01	4.8870-01	4.8239-01
.400	5.0005-01	4.9850-01	4.9563-01	4.9195-01	4.8744-01
.500	5.0017-01	4.9922-01	4.9780-01	4.9597-01	4.9375-01
.600	5.0039-01	5.0025-01	5.0068-01	5.0121-01	5.0186-01
.700	5.0059-01	5.0135-01	5.0391-01	5.0720-01	5.1123-01
.800	5.0086-01	5.0271-01	5.0776-01	5.1427-01	5.2223-01
.900	5.0059-01	5.0419-01	5.1204-01	5.2214-01	5.3449-01
1.000	5.0086-01	5.0581-01	5.1660-01	5.3048-01	5.4747-01

ANGULAR DISTRIBUTION OF INELASTICALLY SCATTERED NEUTRONS (7.7900 MEV LEVEL)
INCIDENT NEUTRON ENERGY(MEV)

ANGLE (COS)	8.132	8.000	8.500	9.000
-1.000	5.0144-01	5.1044-01	5.3613-01	5.6836-01
-.900	5.0101-01	5.0719-01	5.2483-01	5.4697-01
-.800	5.0064-01	5.0446-01	5.1539-01	5.2909-01
-.700	5.0034-01	5.0218-01	5.0743-01	5.1401-01
-.600	5.0010-01	5.0027-01	5.0077-01	5.0139-01
-.500	4.9983-01	4.9868-01	4.9537-01	4.9123-01
-.400	4.9965-01	4.9738-01	4.9092-01	4.8281-01
-.300	4.9944-01	4.9635-01	4.8754-01	4.7650-01
-.200	4.9939-01	4.9570-01	4.8516-01	4.7194-01
-.100	4.9932-01	4.9531-01	4.8386-01	4.6949-01
.000	4.9925-01	4.9510-01	4.8327-01	4.6843-01
.100	4.9932-01	4.9531-01	4.8386-01	4.6949-01
.200	4.9939-01	4.9570-01	4.8516-01	4.7194-01
.300	4.9944-01	4.9635-01	4.8754-01	4.7650-01
.400	4.9965-01	4.9738-01	4.9092-01	4.8281-01
.500	4.9983-01	4.9868-01	4.9537-01	4.9123-01
.600	5.0010-01	5.0027-01	5.0077-01	5.0139-01
.700	5.0034-01	5.0218-01	5.0743-01	5.1401-01
.800	5.0064-01	5.0446-01	5.1539-01	5.2909-01
.900	5.0101-01	5.0719-01	5.2483-01	5.4697-01
1.000	5.0144-01	5.1044-01	5.3613-01	5.6836-01

EOF UNIT 5 AT INTERNAL SEQUENCE NUMBER   00103, LOCATION   014060

A-01

ANGULAR DISTRIBUTION OF (.4392 MEV) GAMMA RAY FROM DE-EXCITATION OF (.4392 MEV LEVEL)

INCIDENT NEUTRON ENERGY(MEV)

ANGLE (COS)	.458	.500	1.000	1.500	2.000	2.500	3.000	3.500	4.000	4.500
-1.000	4.6846-01	5.0264-01	4.7186-01	4.7174-01	4.6994-01	4.6848-01	4.6734-01	4.6658-01	4.6663-01	4.6635-01
-.900	4.7747-01	5.0190-01	4.8001-01	4.7982-01	4.7851-01	4.7746-01	4.7668-01	4.7616-01	4.7653-01	4.7631-01
-.800	4.8523-01	5.0130-01	4.8695-01	4.8688-01	4.8605-01	4.8569-01	4.8469-01	4.8460-01	4.8468-01	4.8456-01
-.700	4.9214-01	5.0154-01	4.9323-01	4.9326-01	4.9283-01	4.9250-01	4.9225-01	4.9209-01	4.9216-01	4.9211-01
-.600	4.9880-01	5.0058-01	4.9896-01	4.9895-01	4.9886-01	4.9879-01	4.9874-01	4.9875-01	4.9887-01	4.9888-01
-.500	5.0404-01	5.0042-01	5.0347-01	5.0347-01	5.0361-01	5.0373-01	5.0383-01	5.0391-01	5.0390-01	5.0395-01
-.400	5.0839-01	4.9997-01	5.0718-01	5.0740-01	5.0786-01	5.0826-01	5.0853-01	5.0871-01	5.0847-01	5.0854-01
-.300	5.1163-01	4.9995-01	5.1001-01	5.1034-01	5.1104-01	5.1160-01	5.1200-01	5.1227-01	5.1210-01	5.1219-01
-.200	5.1394-01	4.9999-01	5.1210-01	5.1242-01	5.1323-01	5.1389-01	5.1439-01	5.1472-01	5.1465-01	5.1477-01
-.100	5.1536-01	4.9957-01	5.1340-01	5.1379-01	5.1471-01	5.1544-01	5.1599-01	5.1635-01	5.1614-01	5.1627-01
-.000	5.1599-01	4.9963-01	5.1493-01	5.1430-01	5.1523-01	5.1596-01	5.1651-01	5.1688-01	5.1664-01	5.1682-01
.100	5.1550-01	4.9986-01	5.1210-01	5.1379-01	5.1471-01	5.1544-01	5.1599-01	5.1635-01	5.1614-01	5.1627-01
.200	5.1394-01	4.9999-01	5.1001-01	5.1242-01	5.1323-01	5.1389-01	5.1439-01	5.1472-01	5.1465-01	5.1477-01
.300	5.1163-01	4.9995-01	5.0718-01	5.1034-01	5.1104-01	5.1160-01	5.1200-01	5.1227-01	5.1210-01	5.1219-01
.400	5.0404-01	4.9997-01	5.0347-01	5.0740-01	5.0786-01	5.0826-01	5.0853-01	5.0871-01	5.0847-01	5.0854-01
.500	5.0058-01	5.0042-01	5.0347-01	5.0347-01	5.0361-01	5.0373-01	5.0383-01	5.0391-01	5.0390-01	5.0395-01
.600	4.9880-01	5.0058-01	4.9896-01	4.9895-01	4.9886-01	4.9879-01	4.9874-01	4.9875-01	4.9887-01	4.9888-01
.700	4.9214-01	5.0154-01	4.9323-01	4.9326-01	4.9283-01	4.9250-01	4.9225-01	4.9209-01	4.9216-01	4.9216-01
.800	4.8523-01	5.0130-01	4.8695-01	4.8688-01	4.8605-01	4.8569-01	4.8469-01	4.8460-01	4.8468-01	4.8456-01
.900	4.7747-01	5.0190-01	4.8001-01	4.7982-01	4.7851-01	4.7746-01	4.7668-01	4.7616-01	4.7653-01	4.7631-01
1.000	4.6846-01	5.0264-01	4.7186-01	4.7174-01	4.6994-01	4.6848-01	4.6734-01	4.6658-01	4.6663-01	4.6635-01

INCIDENT NEUTRON ENERGY(MEV)

ANGLE	5.000	5.500	6.000	6.500	7.000	7.500	8.000	8.500	9.000
-1.000	4.6627-01	4.6639-01	4.6685-01	4.6731-01	4.6794-01	4.6870-01	4.6960-01	4.7064-01	4.7181-01
-.900	4.7619-01	4.7617-01	4.7620-01	4.7641-01	4.7677-01	4.7727-01	4.7791-01	4.7870-01	4.7963-01
-.800	4.8452-01	4.8455-01	4.8468-01	4.8487-01	4.8511-01	4.8542-01	4.8579-01	4.8622-01	4.8673-01
-.700	4.9211-01	4.9216-01	4.9229-01	4.9240-01	4.9255-01	4.9265-01	4.9279-01	4.9294-01	4.9310-01
-.600	4.9888-01	4.9889-01	4.9890-01	4.9890-01	4.9890-01	4.9890-01	4.9889-01	4.9888-01	4.9886-01
-.500	5.0404-01	5.0404-01	5.0410-01	5.0412-01	5.0411-01	5.0409-01	5.0405-01	5.0399-01	5.0390-01
-.400	5.0860-01	5.0863-01	5.0869-01	5.0864-01	5.0855-01	5.0840-01	5.0819-01	5.0793-01	5.0761-01
-.300	5.1222-01	5.1218-01	5.1205-01	5.1189-01	5.1164-01	5.1143-01	5.1113-01	5.1078-01	5.1038-01
-.200	5.1480-01	5.1474-01	5.1454-01	5.1434-01	5.1407-01	5.1374-01	5.1335-01	5.1290-01	5.1239-01
-.100	5.1630-01	5.1625-01	5.1607-01	5.1585-01	5.1555-01	5.1519-01	5.1476-01	5.1425-01	5.1368-01
-.000	5.1687-01	5.1684-01	5.1672-01	5.1652-01	5.1623-01	5.1587-01	5.1542-01	5.1490-01	5.1429-01
.100	5.1630-01	5.1625-01	5.1607-01	5.1585-01	5.1555-01	5.1519-01	5.1476-01	5.1425-01	5.1368-01
.200	5.1480-01	5.1474-01	5.1454-01	5.1434-01	5.1407-01	5.1374-01	5.1335-01	5.1290-01	5.1239-01
.300	5.1222-01	5.1218-01	5.1205-01	5.1189-01	5.1164-01	5.1143-01	5.1113-01	5.1078-01	5.1038-01
.400	5.0860-01	5.0863-01	5.0869-01	5.0864-01	5.0855-01	5.0840-01	5.0819-01	5.0793-01	5.0761-01
.500	5.0404-01	5.0404-01	5.0410-01	5.0412-01	5.0411-01	5.0409-01	5.0405-01	5.0399-01	5.0390-01
.600	4.9888-01	4.9889-01	4.9890-01	4.9890-01	4.9890-01	4.9890-01	4.9889-01	4.9888-01	4.9886-01
.700	4.9216-01	4.9216-01	4.9229-01	4.9240-01	4.9255-01	4.9265-01	4.9279-01	4.9294-01	4.9310-01
.800	4.8452-01	4.8455-01	4.8468-01	4.8487-01	4.8511-01	4.8542-01	4.8579-01	4.8622-01	4.8673-01
.900	4.7619-01	4.7617-01	4.7620-01	4.7641-01	4.7677-01	4.7727-01	4.7791-01	4.7870-01	4.7963-01
1.000	4.6627-01	4.6639-01	4.6683-01	4.6731-01	4.6794-01	4.6870-01	4.6960-01	4.7064-01	4.7181-01

ANGULAR DISTRIBUTION OF (2.0800 MEV) GAMMA RAY FROM DE-EXCITATION OF (2.0800 MEV LEVEL)

INCIDENT NEUTRON ENERGY(MEV)

ANGLE (COS)	2.170	2.500	3.000	3.500	4.000	4.500	5.000	5.500	6.000	6.500
-1.000	3.7550-01	3.9565-01	4.1335-01	4.2797-01	4.3951-01	4.4798-01	4.5337-01	4.2254-01	4.2434-01	4.2613-01
-.900	4.1100-01	4.2586-01	4.3887-01	4.4959-01	4.5802-01	4.6414-01	4.6796-01	4.4399-01	4.4518-01	4.4643-01
-.800	4.4241-01	4.5255-01	4.6142-01	4.6869-01	4.7436-01	4.7843-01	4.8091-01	4.6348-01	4.6418-01	4.6497-01
-.700	4.7099-01	4.7558-01	4.7961-01	4.8295-01	4.8550-01	4.8754-01	4.8879-01	4.8217-01	4.8259-01	4.8298-01
-.600	4.9462-01	4.9462-01	4.9699-01	4.9790-01	4.9861-01	4.9911-01	4.9942-01	4.9742-01	4.9749-01	4.9755-01
-.500	5.1531-01	5.1249-01	5.1003-01	5.0803-01	5.0647-01	5.0538-01	5.0473-01	5.0972-01	5.0957-01	5.0940-01
-.400	5.3106-01	5.2652-01	5.2252-01	5.1920-01	5.1657-01	5.1461-01	5.1334-01	5.2029-01	5.1980-01	5.1928-01
-.300	5.4506-01	5.3768-01	5.3121-01	5.2588-01	5.2168-01	5.1861-01	5.1668-01	5.2849-01	5.2785-01	5.2718-01
-.200	5.5462-01	5.4562-01	5.3773-01	5.3122-01	5.2611-01	5.2237-01	5.2002-01	5.3417-01	5.3342-01	5.3266-01
-.100	5.6165-01	5.5107-01	5.4181-01	5.3417-01	5.2817-01	5.2380-01	5.2103-01	5.3763-01	5.3680-01	5.3597-01
.000	5.6306-01	5.5246-01	5.4316-01	5.3550-01	5.2949-01	5.2508-01	5.2232-01	5.3878-01	5.3792-01	5.3707-01
.100	5.6165-01	5.5107-01	5.4161-01	5.3417-01	5.2817-01	5.2380-01	5.2103-01	5.3763-01	5.3680-01	5.3597-01
.200	5.5462-01	5.4562-01	5.3773-01	5.3122-01	5.2611-01	5.2237-01	5.2002-01	5.3417-01	5.3342-01	5.3266-01
.300	5.4506-01	5.3768-01	5.3121-01	5.2588-01	5.2168-01	5.1861-01	5.1668-01	5.2849-01	5.2785-01	5.2718-01
.400	5.3106-01	5.2652-01	5.2252-01	5.1920-01	5.1657-01	5.1461-01	5.1334-01	5.2029-01	5.1980-01	5.1928-01
.500	5.1531-01	5.1249-01	5.1003-01	5.0803-01	5.0647-01	5.0538-01	5.0473-01	5.0972-01	5.0957-01	5.0940-01
.600	4.9462-01	4.9589-01	4.9699-01	4.9790-01	4.9861-01	4.9911-01	4.9942-01	4.9742-01	4.9749-01	4.9755-01
.700	4.7099-01	4.7558-01	4.7961-01	4.8295-01	4.8550-01	4.8754-01	4.8879-01	4.8217-01	4.8259-01	4.8298-01
.800	4.4241-01	4.5255-01	4.6142-01	4.6869-01	4.7436-01	4.7843-01	4.8091-01	4.6348-01	4.6418-01	4.6497-01
.900	4.1100-01	4.2586-01	4.3887-01	4.4959-01	4.5802-01	4.6414-01	4.6796-01	4.4399-01	4.4518-01	4.4643-01
1.000	3.7550-01	3.9565-01	4.1335-01	4.2797-01	4.3951-01	4.4798-01	4.5337-01	4.2254-01	4.2434-01	4.2613-01

INCIDENT NEUTRON ENERGY(MEV)

ANGLE (COS)	7.000	7.500	8.000	8.500	9.000
-1.000	4.2790-01	4.2967-01	4.3142-01	4.3316-01	4.3489-01
-.900	4.4774-01	4.4910-01	4.5053-01	4.5201-01	4.5355-01
-.800	4.6585-01	4.6683-01	4.6790-01	4.6907-01	4.7033-01
-.700	4.8333-01	4.8366-01	4.8396-01	4.8422-01	4.8446-01
-.600	4.9761-01	4.9766-01	4.9770-01	4.9775-01	4.9774-01
-.500	5.0921-01	5.0899-01	5.0874-01	5.0847-01	5.0817-01
-.400	5.1875-01	5.1819-01	5.1763-01	5.1704-01	5.1643-01
-.300	5.2648-01	5.2575-01	5.2499-01	5.2419-01	5.2336-01
-.200	5.3190-01	5.3111-01	5.3032-01	5.2951-01	5.2869-01
-.100	5.3515-01	5.3433-01	5.3351-01	5.3270-01	5.3189-01
.000	5.3624-01	5.3540-01	5.3458-01	5.3376-01	5.3295-01
.100	5.3515-01	5.3433-01	5.3351-01	5.3270-01	5.3189-01
.200	5.3190-01	5.3111-01	5.3032-01	5.2951-01	5.2869-01
.300	5.2648-01	5.2575-01	5.2499-01	5.2419-01	5.2336-01
.400	5.1875-01	5.1819-01	5.1763-01	5.1704-01	5.1643-01
.500	5.0921-01	5.0899-01	5.0874-01	5.0847-01	5.0817-01
.600	4.9761-01	4.9766-01	4.9770-01	4.9775-01	4.9774-01
.700	4.8333-01	4.8366-01	4.8396-01	4.8422-01	4.8446-01
.800	4.6585-01	4.6683-01	4.6790-01	4.6907-01	4.7033-01
.900	4.4774-01	4.4910-01	4.5053-01	4.5201-01	4.5355-01
1.000	4.2790-01	4.2967-01	4.3142-01	4.3316-01	4.3489-01

ANGULAR DISTRIBUTION OF (1.6400 MEV) GAMMA RAY FROM DE-EXCITATION OF (2.0600 MEV LEVEL)

INCIDENT NEUTRON ENERGY(MEV)

ANGLE (COS)	2.170	2.500	3.000	3.500	4.000	4.500	5.000	5.500	6.000	6.500
-1.000	3.7550-01	3.9565-01	4.1335-01	4.2797-01	4.3951-01	4.4798-01	4.5337-01	4.2254-01	4.2434-01	4.2613-01
-.900	4.1100-01	4.2586-01	4.3807-01	4.4959-01	4.5802-01	4.6414-01	4.6794-01	4.4399-01	4.4518-01	4.4643-01
-.800	4.4241-01	4.5255-01	4.6142-01	4.6869-01	4.7434-01	4.7843-01	4.8091-01	4.6348-01	4.6418-01	4.6497-01
-.700	4.7099-01	4.7558-01	4.7961-01	4.8295-01	4.8559-01	4.8754-01	4.8879-01	4.8217-01	4.8259-01	4.8298-01
-.600	4.9462-01	4.9489-01	4.9699-01	4.9790-01	4.9861-01	4.9911-01	4.9942-01	4.9742-01	4.9749-01	4.9755-01
-.500	5.1531-01	5.1249-01	5.1003-01	5.0803-01	5.0647-01	5.0538-01	5.0473-01	5.0972-01	5.0957-01	5.0940-01
-.400	5.3106-01	5.2652-01	5.2252-01	5.1920-01	5.1657-01	5.1461-01	5.1334-01	5.2029-01	5.1980-01	5.1928-01
-.300	5.4506-01	5.3760-01	5.3121-01	5.2588-01	5.2168-01	5.1861-01	5.1668-01	5.2849-01	5.2785-01	5.2718-01
-.200	5.5462-01	5.4562-01	5.3773-01	5.3122-01	5.2611-01	5.2237-01	5.2002-01	5.3417-01	5.3342-01	5.3266-01
-.100	5.6165-01	5.5107-01	5.4181-01	5.3417-01	5.2817-01	5.2380-01	5.2108-01	5.3763-01	5.3680-01	5.3597-01
.000	5.6306-01	5.5246-01	5.4316-01	5.3550-01	5.2942-01	5.2508-01	5.2232-01	5.3878-01	5.3792-01	5.3707-01
.100	5.6165-01	5.5107-01	5.4181-01	5.3417-01	5.2817-01	5.2380-01	5.2108-01	5.3763-01	5.3680-01	5.3597-01
.200	5.5462-01	5.4562-01	5.3773-01	5.3122-01	5.2611-01	5.2237-01	5.2002-01	5.3417-01	5.3342-01	5.3266-01
.300	5.4506-01	5.3760-01	5.3121-01	5.2588-01	5.2168-01	5.1861-01	5.1668-01	5.2849-01	5.2785-01	5.2718-01
.400	5.3106-01	5.2652-01	5.2252-01	5.1920-01	5.1657-01	5.1461-01	5.1334-01	5.2029-01	5.1980-01	5.1928-01
.500	5.1531-01	5.1249-01	5.1003-01	5.0803-01	5.0647-01	5.0538-01	5.0473-01	5.0972-01	5.0957-01	5.0940-01
.600	4.9462-01	4.9489-01	4.9699-01	4.9790-01	4.9861-01	4.9911-01	4.9942-01	4.9742-01	4.9749-01	4.9755-01
.700	4.7099-01	4.7558-01	4.7961-01	4.8295-01	4.8559-01	4.8754-01	4.8879-01	4.8217-01	4.8259-01	4.8298-01
.800	4.4241-01	4.5255-01	4.6142-01	4.6869-01	4.7434-01	4.7843-01	4.8091-01	4.6348-01	4.6418-01	4.6497-01
.900	4.1100-01	4.2586-01	4.3807-01	4.4959-01	4.5802-01	4.6414-01	4.6794-01	4.4399-01	4.4518-01	4.4643-01
1.000	3.7550-01	3.9565-01	4.1335-01	4.2797-01	4.3951-01	4.4798-01	4.5337-01	4.2254-01	4.2434-01	4.2613-01

INCIDENT NEUTRON ENERGY(MEV)

ANGLE	7.000	7.500	8.000	8.500	9.000
-1.000	4.2790-01	4.2967-01	4.3142-01	4.3316-01	4.3489-01
-.900	4.4774-01	4.4910-01	4.5055-01	4.5201-01	4.5355-01
-.800	4.6585-01	4.6683-01	4.6790-01	4.6907-01	4.7033-01
-.700	4.8333-01	4.8366-01	4.8396-01	4.8422-01	4.8446-01
-.600	4.9761-01	4.9766-01	4.9770-01	4.9775-01	4.9778-01
-.500	5.0921-01	5.0899-01	5.0874-01	5.0847-01	5.0817-01
-.400	5.1875-01	5.1819-01	5.1763-01	5.1704-01	5.1643-01
-.300	5.2648-01	5.2575-01	5.2499-01	5.2419-01	5.2336-01
-.200	5.3190-01	5.3111-01	5.3032-01	5.2951-01	5.2869-01
-.100	5.3515-01	5.3433-01	5.3351-01	5.3270-01	5.3189-01
.000	5.3624-01	5.3540-01	5.3458-01	5.3376-01	5.3295-01
.100	5.3515-01	5.3433-01	5.3351-01	5.3270-01	5.3189-01
.200	5.3190-01	5.3111-01	5.3032-01	5.2951-01	5.2869-01
.300	5.2648-01	5.2575-01	5.2499-01	5.2419-01	5.2336-01
.400	5.1875-01	5.1819-01	5.1763-01	5.1704-01	5.1643-01
.500	5.0921-01	5.0899-01	5.0874-01	5.0847-01	5.0817-01
.600	4.9761-01	4.9766-01	4.9770-01	4.9775-01	4.9778-01
.700	4.8333-01	4.8366-01	4.8396-01	4.8422-01	4.8446-01
.800	4.6585-01	4.6683-01	4.6790-01	4.6907-01	4.7033-01
.900	4.4774-01	4.4910-01	4.5055-01	4.5201-01	4.5355-01
1.000	4.2790-01	4.2967-01	4.3142-01	4.3316-01	4.3489-01

ANGULAR DISTRIBUTION OF (2.2660 MEV) GAMMA RAY FROM DE-EXCITATION OF (2.7650 MEV LEVEL)

INCIDENT NEUTRON ENERGY(MEV)

ANGLE (COS)	2.823	3.000	3.500	4.000	4.500	5.000	5.500	6.000	6.500	7.000
-1.000	6.4001-01	6.2324-01	6.0825-01	5.9722-01	5.9014-01	5.8703-01	5.9870-01	5.9771-01	5.9658-01	5.9533-01
-.900	6.1183-01	5.9732-01	5.8439-01	5.7490-01	5.6884-01	5.6627-01	5.7668-01	5.7589-01	5.7494-01	5.7384-01
-.800	5.8021-01	5.6931-01	5.5957-01	5.5241-01	5.4781-01	5.4579-01	5.5335-01	5.5271-01	5.5200-01	5.5120-01
-.700	5.4918-01	5.4144-01	5.3451-01	5.2936-01	5.2598-01	5.2438-01	5.2924-01	5.2870-01	5.2813-01	5.2757-01
-.600	5.1789-01	5.1399-01	5.1047-01	5.0779-01	5.0596-01	5.0495-01	5.0669-01	5.0636-01	5.0614-01	5.0605-01
-.500	4.6429-01	4.7439-01	4.8338-01	4.8994-01	4.9405-01	4.9574-01	4.8862-01	4.8883-01	4.8901-01	4.8915-01
-.400	4.6441-01	4.6737-01	4.7006-01	4.7211-01	4.7352-01	4.7431-01	4.7275-01	4.7317-01	4.7361-01	4.7406-01
-.300	4.4421-01	4.5062-01	4.5634-01	4.6054-01	4.6323-01	4.6442-01	4.5985-01	4.6029-01	4.6080-01	4.6141-01
-.200	4.3037-01	4.3777-01	4.4442-01	4.4939-01	4.5268-01	4.5430-01	4.4967-01	4.5039-01	4.5116-01	4.5197-01
-.100	4.1985-01	4.2954-01	4.3821-01	4.4460-01	4.4873-01	4.5060-01	4.4398-01	4.4464-01	4.4539-01	4.4622-01
.000	4.1685-01	4.2667-01	4.3547-01	4.4460-01	4.4873-01	4.5060-01	4.4202-01	4.4281-01	4.4365-01	4.4454-01
.100	4.1985-01	4.2954-01	4.3821-01	4.4460-01	4.5268-01	4.5430-01	4.4398-01	4.4464-01	4.4539-01	4.4622-01
.200	4.3037-01	4.3777-01	4.4442-01	4.6054-01	4.6343-01	4.6442-01	4.4967-01	4.5039-01	4.5116-01	4.5197-01
.300	4.4421-01	4.5062-01	4.5634-01	4.7211-01	4.7352-01	4.7431-01	4.5985-01	4.6029-01	4.6080-01	4.6141-01
.400	4.6441-01	4.6737-01	4.7006-01	4.8994-01	4.9405-01	4.9574-01	4.7275-01	4.7317-01	4.7361-01	4.7406-01
.500	4.6429-01	4.7439-01	4.8338-01	5.0779-01	5.0596-01	5.0495-01	4.8862-01	4.8883-01	4.8901-01	4.8915-01
.600	5.1789-01	5.1399-01	5.1047-01	5.2937-01	5.2605-01	5.2452-01	5.0669-01	5.0636-01	5.0614-01	5.0605-01
.700	5.4918-01	5.4143-01	5.3450-01	5.5241-01	5.4781-01	5.4579-01	5.2964-01	5.2914-01	5.2858-01	5.2799-01
.800	5.8021-01	5.6931-01	5.5957-01	5.7490-01	5.6884-01	5.6627-01	5.5335-01	5.5271-01	5.5200-01	5.5120-01
.900	6.1183-01	5.9732-01	5.8439-01	5.9722-01	5.9014-01	5.8703-01	5.7668-01	5.7589-01	5.7494-01	5.7384-01
1.000	6.4001-01	6.2324-01	6.0825-01	5.9722-01	5.9014-01	5.8703-01	5.9870-01	5.9771-01	5.9658-01	5.9533-01

INCIDENT NEUTRON ENERGY(MEV)

ANGLE (COS)	7.500	8.000	8.500	9.000
-1.000	5.9394-01	5.9242-01	5.9076-01	5.8899-01
-.900	5.7258-01	5.7117-01	5.6961-01	5.6790-01
-.800	5.5034-01	5.4939-01	5.4836-01	5.4727-01
-.700	5.2700-01	5.2643-01	5.2586-01	5.2529-01
-.600	5.0607-01	5.0622-01	5.0650-01	5.0690-01
-.500	4.8927-01	4.8934-01	4.8953-01	4.8940-01
-.400	4.7451-01	4.7498-01	4.7545-01	4.7594-01
-.300	4.6210-01	4.6289-01	4.6376-01	4.6473-01
-.200	4.5284-01	4.5376-01	4.5473-01	4.5576-01
-.100	4.4713-01	4.4813-01	4.4921-01	4.5037-01
.000	4.4547-01	4.4646-01	4.4749-01	4.4858-01
.100	4.4713-01	4.4813-01	4.4921-01	4.5037-01
.200	4.5284-01	4.5376-01	4.5473-01	4.5576-01
.300	4.6210-01	4.6289-01	4.6376-01	4.6473-01
.400	4.7451-01	4.7498-01	4.7545-01	4.7594-01
.500	4.8927-01	4.8934-01	4.8953-01	4.8940-01
.600	5.0607-01	5.0622-01	5.0650-01	5.0690-01
.700	5.2737-01	5.2671-01	5.2601-01	5.2529-01
.800	5.5034-01	5.4939-01	5.4836-01	5.4727-01
.900	5.7258-01	5.7117-01	5.6961-01	5.6790-01
1.000	5.9394-01	5.9242-01	5.9076-01	5.8899-01

ANGULAR DISTRIBUTION OF (.6250 MEV) GAMMA RAY FROM DE-EXCITATION OF (2.7050 MEV LEVEL)

INCIDENT NEUTRON ENERGY(MEV)

ANGLE (COS)	2.823	3.000	3.500	4.000	4.500	5.000	5.500	6.000	6.500	7.000
-1.000	6.4001-01	6.2324-01	6.0825-01	5.9722-01	5.9014-01	5.8703-01	5.9870-01	5.9771-01	5.9658-01	5.9533-01
-.900	6.1183-01	5.9732-01	5.8439-01	5.7490-01	5.6886-01	5.6627-01	5.7668-01	5.7589-01	5.7494-01	5.7384-01
-.800	5.80 -01	5.6931-01	5.5957-01	5.5241-01	5.4781-01	5.4579-01	5.5335-01	5.5271-01	5.5200-01	5.5120-01
-.700	5.45 -01	5.4144-01	5.3451-01	5.2936-01	5.2590-01	5.2438-01	5.2924-01	5.2870-01	5.2813-01	5.2757-01
-.600	5.1789-01	5.1399-01	5.1047-01	5.0779-01	5.0594-01	5.0495-01	5.0669-01	5.0636-01	5.0614-01	5.0605-01
-.500	4.6429-01	4.7439-01	4.8338-01	4.8994-01	4.9405-01	4.9574-01	4.8862-01	4.8883-01	4.8901-01	4.8915-01
-.400	4.6441-01	4.6737-01	4.7006-01	4.7211-01	4.7352-01	4.7431-01	4.7275-01	4.7317-01	4.7361-01	4.7406-01
-.300	4.4421-01	4.5062-01	4.5634-01	4.6054-01	4.6323-01	4.6442-01	4.5985-01	4.6029-01	4.6080-01	4.6141-01
-.200	4.3037-01	4.3777-01	4.4442-01	4.4939-01	4.5268-01	4.5430-01	4.4967-01	4.5039-01	4.5116-01	4.5197-01
-.100	4.1985-01	4.2954-01	4.3821-01	4.4460-01	4.4873-01	4.5060-01	4.4398-01	4.4464-01	4.4539-01	4.4622-01
.000	4.1685-01	4.2667-01	4.3547-01	4.4203-01	4.4631-01	4.4835-01	4.4398-01	4.4281-01	4.4539-01	4.4454-01
.100	4.1985-01	4.2954-01	4.3821-01	4.4460-01	4.4873-01	4.5060-01	4.4398-01	4.4464-01	4.5116-01	4.5197-01
.200	4.3037-01	4.3777-01	4.4442-01	4.4939-01	4.5268-01	4.5430-01	4.4967-01	4.5039-01	4.6080-01	4.6141-01
.300	4.4421-01	4.5062-01	4.5634-01	4.6054-01	4.6323-01	4.6442-01	4.5985-01	4.6029-01	4.6080-01	4.6141-01
.400	4.6441-01	4.6737-01	4.7006-01	4.7221-01	4.7352-01	4.7431-01	4.7275-01	4.7317-01	4.7361-01	4.7406-01
.500	4.6429-01	4.7439-01	4.8338-01	4.8994-01	4.9405-01	4.9574-01	4.8862-01	4.8883-01	4.8901-01	4.8915-01
.600	5.1789-01	5.1399-01	5.1047-01	5.0779-01	5.0594-01	5.0495-01	5.0669-01	5.0636-01	5.0614-01	5.0605-01
.700	5.4918-01	5.4143-01	5.3450-01	5.2937-01	5.2605-01	5.2452-01	5.2964-01	5.2914-01	5.2850-01	5.2799-01
.800	5.8021-01	5.6931-01	5.5957-01	5.5241-01	5.4781-01	5.4579-01	5.5335-01	5.5271-01	5.5200-01	5.5120-01
.900	6.1183-01	5.9732-01	5.8439-01	5.7490-01	5.6886-01	5.6627-01	5.7668-01	5.7589-01	5.7494-01	5.7384-01
1.000	6.4001-01	6.2324-01	6.0825-01	5.9722-01	5.9014-01	5.8703-01	5.9870-01	5.9771-01	5.9658-01	5.9533-01

INCIDENT NEUTRON ENERGY(MEV)

ANGLE	7.500	8.000	8.500	9.000
-1.000	5.9394-01	5.9242-01	5.9076-01	5.8899-01
-.900	5.7258-01	5.7117-01	5.6961-01	5.6790-01
-.800	5.5034-01	5.4939-01	5.4836-01	5.4727-01
-.700	5.2700-01	5.2643-01	5.2586-01	5.2529-01
-.600	5.0607-01	5.0622-01	5.0650-01	5.0690-01
-.500	4.8927-01	4.8934-01	4.8930-01	4.8940-01
-.400	4.7451-01	4.7490-01	4.7545-01	4.7594-01
-.300	4.6210-01	4.6289-01	4.6376-01	4.6473-01
-.200	4.5284-01	4.5376-01	4.5473-01	4.5576-01
-.100	4.4713-01	4.4813-01	4.4921-01	4.5037-01
.000	4.4547-01	4.4646-01	4.4749-01	4.4858-01
.100	4.4713-01	4.4813-01	4.4921-01	4.5037-01
.200	4.5284-01	4.5376-01	4.5473-01	4.5576-01
.300	4.6210-01	4.6289-01	4.6376-01	4.6473-01
.400	4.7451-01	4.7490-01	4.7545-01	4.7594-01
.500	4.8927-01	4.8934-01	4.8938-01	4.8940-01
.600	5.0607-01	5.0622-01	5.0650-01	5.0690-01
.700	5.2737-01	5.2671-01	5.2671-01	5.2529-01
.800	5.5034-01	5.4939-01	5.4836-01	5.4727-01
.900	5.7258-01	5.7117-01	5.6961-01	5.6790-01
1.000	5.9394-01	5.9242-01	5.9076-01	5.8899-01

ANGULAR DISTRIBUTION OF (2.9840 MEV) GAMMA RAY FROM DE-EXCITATION OF (2.9840 MEV LEVEL)

INCIDENT NEUTRON ENERGY(MEV)

ANGLE (COS)	3.114	3.500	4.000	4.500	5.000	5.500	6.000	6.500	7.000	7.500
-1.000	4.9834-01	4.9651-01	4.9513-01	4.9418-01	4.9368-01	4.9373-01	4.9378-01	4.9385-01	4.9393-01	4.9402-01
-.900	4.9879-01	4.9747-01	4.9647-01	4.9579-01	4.9544-01	4.9549-01	4.9554-01	4.9561-01	4.9567-01	4.9574-01
-.800	4.9924-01	4.9803-01	4.9716-01	4.9670-01	4.9660-01	4.9697-01	4.9726-01	4.9748-01	4.9763-01	4.9770-01
-.700	4.9965-01	4.9926-01	4.9894-01	4.9871-01	4.9856-01	4.9850-01	4.9847-01	4.9846-01	4.9848-01	4.9853-01
-.600	4.9994-01	4.9990-01	4.9986-01	4.9981-01	4.9977-01	4.9971-01	4.9968-01	4.9966-01	4.9968-01	4.9971-01
-.500	5.0019-01	5.0045-01	5.0064-01	5.0076-01	5.0083-01	5.0081-01	5.0079-01	5.0079-01	5.0081-01	5.0083-01
-.400	5.0044-01	5.0097-01	5.0136-01	5.0161-01	5.0173-01	5.0167-01	5.0164-01	5.0161-01	5.0161-01	5.0161-01
-.300	5.0059-01	5.0128-01	5.0179-01	5.0215-01	5.0233-01	5.0232-01	5.0230-01	5.0230-01	5.0231-01	5.0233-01
-.200	5.0074-01	5.0158-01	5.0221-01	5.0263-01	5.0284-01	5.0281-01	5.0269-01	5.0249-01	5.0249-01	5.0288-01
-.100	5.0079-01	5.0173-01	5.0243-01	5.0290-01	5.0314-01	5.0309-01	5.0304-01	5.0299-01	5.0293-01	5.0304-01
.000	5.0085-01	5.0182-01	5.0254-01	5.0301-01	5.0324-01	5.0315-01	5.0308-01	5.0304-01	5.0080-01	5.0083-01
.100	5.0079-01	5.0173-01	5.0243-01	5.0290-01	5.0314-01	5.0309-01	5.0304-01	5.0299-01	5.0293-01	5.0304-01
.200	5.0074-01	5.0158-01	5.0221-01	5.0263-01	5.0284-01	5.0281-01	5.0269-01	5.0249-01	5.0249-01	5.0288-01
.300	5.0059-01	5.0128-01	5.0179-01	5.0215-01	5.0233-01	5.0232-01	5.0230-01	5.0230-01	5.0231-01	5.0233-01
.400	5.0044-01	5.0097-01	5.0136-01	5.0161-01	5.0173-01	5.0167-01	5.0164-01	5.0161-01	5.0161-01	5.0161-01
.500	5.0019-01	5.0045-01	5.0064-01	5.0076-01	5.0083-01	5.0081-01	5.0079-01	5.0079-01	5.0081-01	5.0083-01
.600	4.9994-01	4.9990-01	4.9986-01	4.9981-01	4.9977-01	4.9971-01	4.9968-01	4.9966-01	4.9968-01	4.9971-01
.700	4.9965-01	4.9926-01	4.9894-01	4.9871-01	4.9856-01	4.9850-01	4.9847-01	4.9846-01	4.9848-01	4.9853-01
.800	4.9924-01	4.9803-01	4.9716-01	4.9670-01	4.9660-01	4.9697-01	4.9726-01	4.9748-01	4.9763-01	4.9770-01
.900	4.9879-01	4.9747-01	4.9647-01	4.9579-01	4.9544-01	4.9549-01	4.9554-01	4.9561-01	4.9567-01	4.9574-01
1.000	4.9834-01	4.9651-01	4.9513-01	4.9418-01	4.9368-01	4.9373-01	4.9378-01	4.9385-01	4.9393-01	4.9402-01

INCIDENT NEUTRON ENERGY(MEV)

ANGLE (COS)	8.000	8.500	9.000
-1.000	4.9411-01	4.9422-01	4.9433-01
-.900	4.9582-01	4.9590-01	4.9599-01
-.800	4.9769-01	4.9761-01	4.9745-01
-.700	4.9860-01	4.9869-01	4.9881-01
-.600	4.9978-01	4.9986-01	4.9997-01
-.500	5.0087-01	5.0091-01	5.0097-01
-.400	5.0163-01	5.0167-01	5.0172-01
-.300	5.0235-01	5.0238-01	5.0243-01
-.200	5.0283-01	5.0274-01	5.0273-01
-.100	5.0308-01	5.0314-01	5.0324-01
.000	5.0138-01	5.0084-01	5.0022-01
.100	5.0308-01	5.0314-01	5.0324-01
.200	5.0283-01	5.0274-01	5.0273-01
.300	5.0235-01	5.0238-01	5.0243-01
.400	5.0163-01	5.0167-01	5.0172-01
.500	5.0087-01	5.0091-01	5.0097-01
.600	4.9978-01	4.9986-01	4.9997-01
.700	4.9860-01	4.9869-01	4.9881-01
.800	4.9769-01	4.9761-01	4.9745-01
.900	4.9582-01	4.9590-01	4.9599-01
1.000	4.9411-01	4.9422-01	4.9433-01

ANGULAR DISTRIBUTION OF (2.5450 MEV) GAMMA RAY FROM DE-EXCITATION OF (2.9040 MEV LEVEL)

INCIDENT NEUTRON ENERGY(MEV)

ANGLE (COS)	3.114	3.500	4.000	4.500	5.000	5.500	6.000	6.500	7.000	7.500
-1.000	4.9834-01	4.9651-01	4.9513-01	4.9418-01	4.9360-01	4.9373-01	4.9378-01	4.9385-01	4.9393-01	4.9402-01
-.900	4.9879-01	4.9747-01	4.9647-01	4.9579-01	4.9544-01	4.9549-01	4.9554-01	4.9561-01	4.9567-01	4.9574-01
-.800	4.9924-01	4.9803-01	4.9710-01	4.9670-01	4.9660-01	4.9649-01	4.9726-01	4.9748-01	4.9763-01	4.9770-01
-.700	4.9965-01	4.9926-01	4.9894-01	4.9871-01	4.9854-01	4.9850-01	4.9847-01	4.9846-01	4.9848-01	4.9853-01
-.600	4.9994-01	4.9990-01	4.9986-01	4.9981-01	4.9977-01	4.9971-01	4.9968-01	4.9966-01	4.9968-01	4.9971-01
-.500	5.0019-01	5.0045-01	5.0064-01	5.0076-01	5.0083-01	5.0081-01	5.0079-01	5.0079-01	5.0081-01	5.0083-01
-.400	5.0044-01	5.0097-01	5.0136-01	5.0161-01	5.0173-01	5.0167-01	5.0164-01	5.0161-01	5.0161-01	5.0161-01
-.300	5.0059-01	5.0128-01	5.0179-01	5.0215-01	5.0233-01	5.0232-01	5.0230-01	5.0230-01	5.0231-01	5.0233-01
-.200	5.0074-01	5.0156-01	5.0221-01	5.0263-01	5.0284-01	5.0281-01	5.0269-01	5.0249-01	5.0221-01	5.0184-01
-.100	5.0079-01	5.0173-01	5.0243-01	5.0290-01	5.0314-01	5.0309-01	5.0304-01	5.0297-01	5.0293-01	5.0288-01
.000	5.0035-01	5.0182-01	5.0254-01	5.0301-01	5.0324-01	5.0315-01	5.0308-01	5.0304-01	5.0303-01	5.0288-01
.100	5.0079-01	5.0173-01	5.0243-01	5.0290-01	5.0314-01	5.0309-01	5.0304-01	5.0299-01	5.0293-01	5.0288-01
.200	5.0074-01	5.0158-01	5.0221-01	5.0263-01	5.0284-01	5.0281-01	5.0269-01	5.0249-01	5.0221-01	5.0184-01
.300	5.0059-01	5.0128-01	5.0179-01	5.0215-01	5.0233-01	5.0232-01	5.0230-01	5.0230-01	5.0231-01	5.0233-01
.400	5.0044-01	5.0097-01	5.0136-01	5.0161-01	5.0173-01	5.0167-01	5.0164-01	5.0161-01	5.0161-01	5.0161-01
.500	5.0019-01	5.0045-01	5.0064-01	5.0076-01	5.0083-01	5.0081-01	5.0079-01	5.0079-01	5.0081-01	5.0083-01
.600	4.9994-01	4.9990-01	4.9986-01	4.9981-01	4.9977-01	4.9971-01	4.9968-01	4.9966-01	4.9968-01	4.9971-01
.700	4.9924-01	4.9926-01	4.9894-01	4.9871-01	4.9854-01	4.9850-01	4.9847-01	4.9846-01	4.9848-01	4.9853-01
.800	4.9879-01	4.9803-01	4.9710-01	4.9670-01	4.9660-01	4.9649-01	4.9726-01	4.9748-01	4.9763-01	4.9770-01
.900	4.9879-01	4.9747-01	4.9647-01	4.9579-01	4.9544-01	4.9549-01	4.9554-01	4.9561-01	4.9567-01	4.9574-01
1.000	4.9834-01	4.9651-01	4.9513-01	4.9418-01	4.9360-01	4.9373-01	4.9378-01	4.9385-01	4.9393-01	4.9402-01

INCIDENT NEUTRON ENERGY(MEV)

ANGLE (COS)	8.000	8.500	9.000
-1.000	4.9411-01	4.9422-01	4.9433-01
-.900	4.9582-01	4.9590-01	4.9599-01
-.800	4.9769-01	4.9761-01	4.9745-01
-.700	4.9860-01	4.9869-01	4.9881-01
-.600	4.9978-01	4.9986-01	4.9997-01
-.500	5.0087-01	5.0091-01	5.0097-01
-.400	5.0163-01	5.0167-01	5.0172-01
-.300	5.0235-01	5.0238-01	5.0243-01
-.200	5.0138-01	5.0084-01	5.0022-01
-.100	5.0283-01	5.0278-01	5.0273-01
.000	5.0308-01	5.0314-01	5.0324-01
.100	5.0283-01	5.0278-01	5.0273-01
.200	5.0138-01	5.0084-01	5.0022-01
.300	5.0235-01	5.0238-01	5.0243-01
.400	5.0163-01	5.0167-01	5.0172-01
.500	5.0087-01	5.0091-01	5.0097-01
.600	4.9978-01	4.9986-01	4.9997-01
.700	4.9860-01	4.9869-01	4.9881-01
.800	4.9769-01	4.9761-01	4.9745-01
.900	4.9582-01	4.9590-01	4.9599-01
1.000	4.9411-01	4.9422-01	4.9433-01

ANGULAR DISTRIBUTION OF (3.6780 MEV) GAMMA RAY FROM DE-EXCITATION OF (3.6780 MEV LEVEL)

INCIDENT NEUTRON ENERGY(MEV)

ANGLE (COS)	3.838	4.000	4.500	5.000	5.500	6.000	6.500	7.000	7.500	8.000
-1.000	4.9775-01	4.9631-01	4.9451-01	4.9339-01	4.9340-01	4.9357-01	4.9364-01	4.9371-01	4.9378-01	4.9383-01
-.900	4.9834-01	4.9733-01	4.9604-01	4.9525-01	4.9530-01	4.9535-01	4.9559-01	4.9544-01	4.9549-01	4.9553-01
-.800	4.9894-01	4.9826-01	4.9743-01	4.9691-01	4.9694-01	4.9701-01	4.9706-01	4.9709-01	4.9713-01	4.9717-01
-.700	4.9948-01	4.9913-01	4.9869-01	4.9842-01	4.9845-01	4.9848-01	4.9850-01	4.9853-01	4.9855-01	4.9856-01
-.600	4.9993-01	4.9990-01	4.9984-01	4.9973-01	4.9949-01	4.9931-01	4.9921-01	4.9918-01	4.9922-01	4.9932-01
-.500	5.0027-01	5.0044-01	5.0064-01	5.0078-01	5.0080-01	5.0081-01	5.0081-01	5.0081-01	5.0080-01	5.0079-01
-.400	5.0056-01	5.0095-01	5.0143-01	5.0174-01	5.0174-01	5.0176-01	5.0174-01	5.0175-01	5.0172-01	5.0169-01
-.300	5.0086-01	5.0137-01	5.0203-01	5.0245-01	5.0247-01	5.0247-01	5.0247-01	5.0247-01	5.0240-01	5.0235-01
-.200	5.0101-01	5.0165-01	5.0245-01	5.0295-01	5.0292-01	5.0289-01	5.0284-01	5.0283-01	5.0280-01	5.0277-01
-.100	5.0111-01	5.0181-01	5.0270-01	5.0325-01	5.0322-01	5.0320-01	5.0316-01	5.0313-01	5.0309-01	5.0304-01
.000	5.0116-01	5.0188-01	5.0279-01	5.0335-01	5.0332-01	5.0330-01	5.0326-01	5.0323-01	5.0319-01	5.0314-01
.100	5.0111-01	5.0181-01	5.0270-01	5.0325-01	5.0322-01	5.0320-01	5.0316-01	5.0313-01	5.0309-01	5.0304-01
.200	5.0101-01	5.0165-01	5.0245-01	5.0295-01	5.0292-01	5.0289-01	5.0284-01	5.0283-01	5.0280-01	5.0277-01
.300	5.0086-01	5.0137-01	5.0203-01	5.0245-01	5.0247-01	5.0247-01	5.0247-01	5.0244-01	5.0240-01	5.0235-01
.400	5.0056-01	5.0095-01	5.0143-01	5.0174-01	5.0174-01	5.0176-01	5.0174-01	5.0175-01	5.0172-01	5.0169-01
.500	5.0027-01	5.0044-01	5.0064-01	5.0078-01	5.0080-01	5.0081-01	5.0081-01	5.0081-01	5.0080-01	5.0079-01
.600	4.9993-01	4.9990-01	4.9984-01	4.9973-01	4.9949-01	4.9931-01	4.9921-01	4.9918-01	4.9922-01	4.9932-01
.700	4.9948-01	4.9913-01	4.9869-01	4.9842-01	4.9845-01	4.9848-01	4.9850-01	4.9853-01	4.9855-01	4.9856-01
.800	4.9894-01	4.9826-01	4.9743-01	4.9691-01	4.9694-01	4.9701-01	4.9706-01	4.9709-01	4.9713-01	4.9717-01
.900	4.9834-01	4.9733-01	4.9604-01	4.9525-01	4.9530-01	4.9535-01	4.9559-01	4.9544-01	4.9549-01	4.9553-01
1.000	4.9775-01	4.9631-01	4.9451-01	4.9339-01	4.9340-01	4.9357-01	4.9364-01	4.9371-01	4.9378-01	4.9383-01

INCIDENT NEUTRON ENERGY(MEV)

ANGLE	8.500	9.000
-1.000	4.9387-01	4.9391-01
-.900	4.9557-01	4.9562-01
-.800	4.9720-01	4.9723-01
-.700	4.9858-01	4.9858-01
-.600	4.9974-01	4.9974-01
-.500	5.0077-01	5.0075-01
-.400	5.0166-01	5.0161-01
-.300	5.0228-01	5.0221-01
-.200	5.0274-01	5.0271-01
-.100	5.0301-01	5.0296-01
.000	5.0301-01	5.0296-01
.100	5.0274-01	5.0271-01
.200	5.0228-01	5.0221-01
.300	5.0166-01	5.0161-01
.400	5.0077-01	5.0075-01
.500	4.9949-01	4.9974-01
.600	4.9858-01	4.9858-01
.700	4.9720-01	4.9723-01
.800	4.9557-01	4.9562-01
.900	4.9387-01	4.9391-01

ANGULAR DISTRIBUTION OF (3.2390 MEV) GAMMA RAY FROM DE-EXCITATION OF (3.6780 MEV LEVEL)

INCIDENT NEUTRON ENERGY(MEV)

ANGLE (COS)	3.838	4.000	4.500	5.000	5.500	6.000	6.500	7.000	7.500	8.000
-1.000	4.9775-01	4.9631-01	4.9451-01	4.9339-01	4.9348-01	4.9357-01	4.9364-01	4.9371-01	4.9378-01	4.9383-01
-.900	4.9834-01	4.9733-01	4.9604-01	4.9525-01	4.9530-01	4.9535-01	4.9539-01	4.9544-01	4.9549-01	4.9553-01
-.800	4.9894-01	4.9826-01	4.9743-01	4.9691-01	4.9696-01	4.9701-01	4.9706-01	4.9709-01	4.9713-01	4.9717-01
-.700	4.9948-01	4.9913-01	4.9869-01	4.9842-01	4.9845-01	4.9848-01	4.9850-01	4.9853-01	4.9855-01	4.9856-01
-.600	4.9993-01	4.9990-01	4.9984-01	4.9973-01	4.9949-01	4.9931-01	4.9921-01	4.9918-01	4.9922-01	4.9932-01
-.500	5.0027-01	5.0044-01	5.0064-01	5.0078-01	5.0080-01	5.0081-01	5.0081-01	5.0081-01	5.0080-01	5.0079-01
-.400	5.0055-01	5.0095-01	5.0143-01	5.0174-01	5.0174-01	5.0176-01	5.0174-01	5.0175-01	5.0172-01	5.0169-01
-.300	5.0086-01	5.0137-01	5.0203-01	5.0245-01	5.0247-01	5.0247-01	5.0247-01	5.0244-01	5.0240-01	5.0235-01
-.200	5.0101-01	5.0165-01	5.0245-01	5.0295-01	5.0292-01	5.0289-01	5.0264-01	5.0283-01	5.0280-01	5.0277-01
-.100	5.0111-01	5.0181-01	5.0270-01	5.0325-01	5.0322-01	5.0320-01	5.0314-01	5.0313-01	5.0309-01	5.0304-01
.000	5.0116-01	5.0188-01	5.0270-01	5.0335-01	5.0335-01	5.0330-01	5.0324-01	5.0323-01	5.0319-01	5.0314-01
.100	5.0111-01	5.0181-01	5.0270-01	5.0325-01	5.0322-01	5.0320-01	5.0314-01	5.0313-01	5.0309-01	5.0304-01
.200	5.0101-01	5.0165-01	5.0245-01	5.0295-01	5.0292-01	5.0289-01	5.0264-01	5.0283-01	5.0280-01	5.0277-01
.300	5.0086-01	5.0137-01	5.0203-01	5.0245-01	5.0247-01	5.0247-01	5.0247-01	5.0244-01	5.0240-01	5.0235-01
.400	5.0056-01	5.0095-01	5.0143-01	5.0174-01	5.0174-01	5.0176-01	5.0174-01	5.0175-01	5.0172-01	5.0169-01
.500	5.0027-01	5.0044-01	5.0064-01	5.0078-01	5.0080-01	5.0081-01	5.0081-01	5.0081-01	5.0080-01	5.0080-01
.600	4.9993-01	4.9990-01	4.9984-01	4.9973-01	4.9949-01	4.9931-01	4.9921-01	4.9918-01	4.9922-01	4.9932-01
.700	4.9948-01	4.9913-01	4.9869-01	4.9842-01	4.9845-01	4.9848-01	4.9850-01	4.9853-01	4.9855-01	4.9856-01
.800	4.9894-01	4.9826-01	4.9743-01	4.9691-01	4.9696-01	4.9701-01	4.9706-01	4.9709-01	4.9713-01	4.9717-01
.900	4.9834-01	4.9733-01	4.9604-01	4.9525-01	4.9530-01	4.9535-01	4.9539-01	4.9544-01	4.9549-01	4.9553-01
1.000	4.9775-01	4.9631-01	4.9451-01	4.9339-01	4.9348-01	4.9357-01	4.9364-01	4.9371-01	4.9378-01	4.9383-01

ANGLE (COS)	8.500	9.000
-1.000	4.9387-01	4.9391-01
-.900	4.9557-01	4.9562-01
-.800	4.9720-01	4.9723-01
-.700	4.9858-01	4.9858-01
-.600	4.9949-01	4.9974-01
-.500	5.0077-01	5.0075-01
-.400	5.0166-01	5.0161-01
-.300	5.0228-01	5.0221-01
-.200	5.0274-01	5.0271-01
-.100	5.0301-01	5.0296-01
.000	5.0311-01	5.0306-01
.100	5.0301-01	5.0296-01
.200	5.0274-01	5.0271-01
.300	5.0228-01	5.0221-01
.400	5.0166-01	5.0161-01
.500	5.0077-01	5.0075-01
.600	4.9949-01	4.9974-01
.700	4.9858-01	4.9858-01
.800	4.9720-01	4.9723-01
.900	4.9557-01	4.9562-01
1.000	4.9387-01	4.9391-01

INCIDENT NEUTRON ENERGY(MEV)

A-100

ANGULAR DISTRIBUTION OF (1.5980 MEV) GAMMA RAY FROM DE-EXCITATION OF (3.6780 MEV LEVEL)

INCIDENT NEUTRON ENERGY(MEV)

ANGLE (COS)	3.838	4.000	4.500	5.000	5.500	6.000	6.500	7.000	7.500	8.000
-1.000	4.9775-01	4.9631-01	4.9451-01	4.9339-01	4.9340-01	4.9357-01	4.9364-01	4.9371-01	4.9378-01	4.9383-01
-.900	4.9834-01	4.9733-01	4.9604-01	4.9525-01	4.9530-01	4.9535-01	4.9539-01	4.9544-01	4.9549-01	4.9553-01
-.800	4.9894-01	4.9826-01	4.9743-01	4.9691-01	4.9696-01	4.9701-01	4.9706-01	4.9709-01	4.9713-01	4.9717-01
-.700	4.9948-01	4.9913-01	4.9869-01	4.9842-01	4.9845-01	4.9843-01	4.9850-01	4.9853-01	4.9855-01	4.9856-01
-.600	4.9993-01	4.9990-01	4.9984-01	4.9973-01	4.9949-01	4.9931-01	4.9921-01	4.9918-01	4.9922-01	4.9932-01
-.500	5.0027-01	5.0044-01	5.0064-01	5.0078-01	5.0080-01	5.0081-01	5.0081-01	5.0081-01	5.0080-01	5.0079-01
-.400	5.0056-01	5.0095-01	5.0143-01	5.0174-01	5.0174-01	5.0176-01	5.0174-01	5.0175-01	5.0172-01	5.0169-01
-.300	5.0101-01	5.0137-01	5.0203-01	5.0245-01	5.0247-01	5.0247-01	5.0247-01	5.0244-01	5.0240-01	5.0235-01
-.200	5.0111-01	5.0165-01	5.0245-01	5.0295-01	5.0292-01	5.0289-01	5.0284-01	5.0283-01	5.0280-01	5.0277-01
-.100	5.0116-01	5.0181-01	5.0270-01	5.0325-01	5.0322-01	5.0320-01	5.0316-01	5.0313-01	5.0309-01	5.0304-01
.000	5.0111-01	5.0188-01	5.0279-01	5.0335-01	5.0332-01	5.0330-01	5.0326-01	5.0323-01	5.0319-01	5.0314-01
.100	5.0101-01	5.0181-01	5.0270-01	5.0325-01	5.0322-01	5.0320-01	5.0316-01	5.0313-01	5.0309-01	5.0304-01
.200	5.0086-01	5.0165-01	5.0245-01	5.0295-01	5.0292-01	5.0289-01	5.0284-01	5.0283-01	5.0280-01	5.0277-01
.300	5.0056-01	5.0137-01	5.0203-01	5.0245-01	5.0247-01	5.0247-01	5.0247-01	5.0244-01	5.0240-01	5.0235-01
.400	5.0027-01	5.0095-01	5.0143-01	5.0174-01	5.0174-01	5.0176-01	5.0174-01	5.0175-01	5.0172-01	5.0169-01
.500	4.9993-01	5.0044-01	5.0064-01	5.0078-01	5.0080-01	5.0081-01	5.0081-01	5.0081-01	5.0080-01	5.0079-01
.600	4.9948-01	4.9913-01	4.9984-01	4.9842-01	4.9949-01	4.9931-01	4.9921-01	4.9918-01	4.9922-01	4.9856-01
.700	4.9894-01	4.9913-01	4.9869-01	4.9842-01	4.9845-01	4.9848-01	4.9850-01	4.9853-01	4.9855-01	4.9856-01
.800	4.9894-01	4.9826-01	4.9869-01	4.9691-01	4.9696-01	4.9701-01	4.9706-01	4.9709-01	4.9713-01	4.9717-01
.900	4.9834-01	4.9733-01	4.9604-01	4.9525-01	4.9530-01	4.9535-01	4.9539-01	4.9544-01	4.9549-01	4.9553-01
1.000	4.9775-01	4.9631-01	4.9451-01	4.9339-01	4.9340-01	4.9357-01	4.9364-01	4.9371-01	4.9378-01	4.9383-01

INCIDENT NEUTRON ENERGY(MEV)

ANGLE (COS)	8.500	9.000
-1.000	4.9387-01	4.9391-01
-.900	4.9557-01	4.9562-01
-.800	4.9720-01	4.9723-01
-.700	4.9858-01	4.9858-01
-.600	4.9949-01	4.9974-01
-.500	5.0077-01	5.0075-01
-.400	5.0166-01	5.0161-01
-.300	5.0228-01	5.0221-01
-.200	5.0274-01	5.0271-01
-.100	5.0301-01	5.0296-01
.000	5.0311-01	5.0306-01
.100	5.0301-01	5.0296-01
.200	5.0274-01	5.0271-01
.300	5.0228-01	5.0221-01
.400	5.0166-01	5.0161-01
.500	5.0077-01	5.0075-01
.600	4.9949-01	4.9974-01
.700	4.9858-01	4.9858-01
.800	4.9720-01	4.9723-01
.900	4.9557-01	4.9562-01
1.000	4.9387-01	4.9391-01

ANGULAR DISTRIBUTION OF (1.0380 MEV) GAMMA RAY FROM DE-EXCITATION OF (3.6780 MEV LEVEL)

INCIDENT NEUTRON ENERGY(MEV)

ANGLE (COS)	3.838	4.000	4.500	5.000	.500	4.000	6.500	7.000	7.500	8.000
-1.000	4.9775-01	4.9631-01	4.9451-01	4.9339-01	4.9348-01	4.9357-01	4.9364-01	4.9371-01	4.9378-01	4.9383-01
-.900	4.9834-01	4.9733-01	4.9604-01	4.9525-01	4.9530-01	4.9535-01	4.9539-01	4.9544-01	4.9549-01	4.9553-01
-.800	4.9894-01	4.9826-01	4.9743-01	4.9691-01	4.9696-01	4.9701-01	4.9706-01	4.9709-01	4.9713-01	4.9717-01
-.700	4.9948-01	4.9913-01	4.9869-01	4.9842-01	4.9845-01	4.9848-01	4.9850-01	4.9853-01	4.9855-01	4.9856-01
-.600	4.9993-01	4.9990-01	4.9984-01	4.9973-01	4.9949-01	4.9931-01	4.9921-01	4.9918-01	4.9922-01	4.9932-01
-.500	5.0027-01	5.0044-01	5.0064-01	5.0078-01	5.0080-01	5.0081-01	5.0081-01	5.0081-01	5.0080-01	5.0079-01
-.400	5.0056-01	5.0095-01	5.0143-01	5.0174-01	5.0174-01	5.0176-01	5.0174-01	5.0175-01	5.0172-01	5.0169-01
-.300	5.0086-01	5.0137-01	5.0203-01	5.0245-01	5.0247-01	5.0247-01	5.0247-01	5.0244-01	5.0240-01	5.0235-01
-.200	5.0101-01	5.0165-01	5.0245-01	5.0295-01	5.0292-01	5.0289-01	5.0284-01	5.0283-01	5.0280-01	5.0277-01
-.100	5.0111-01	5.0181-01	5.0270-01	5.0325-01	5.0322-01	5.0320-01	5.0316-01	5.0313-01	5.0309-01	5.0304-01
.000	5.0116-01	5.0188-01	5.0279-01	5.0335-01	5.0332-01	5.0380-01	5.0324-01	5.0323-01	5.0319-01	5.0314-01
.100	5.0111-01	5.0181-01	5.0270-01	5.0325-01	5.0322-01	5.0320-01	5.0316-01	5.0313-01	5.0309-01	5.0304-01
.200	5.0101-01	5.0165-01	5.0245-01	5.0295-01	5.0292-01	5.0247-01	5.0284-01	5.0283-01	5.0280-01	5.0235-01
.300	5.0086-01	5.0137-01	5.0203-01	5.0245-01	5.0247-01	5.0247-01	5.0247-01	5.0244-01	5.0240-01	5.0169-01
.400	5.0056-01	5.0095-01	5.0143-01	5.0174-01	5.0174-01	5.0176-01	5.0174-01	5.0175-01	5.0172-01	5.0079-01
.500	5.0027-01	5.0044-01	5.0064-01	5.0078-01	5.0080-01	5.0081-01	5.0081-01	5.0081-01	5.0080-01	4.9932-01
.600	4.9993-01	4.9990-01	4.9984-01	4.9973-01	4.9949-01	4.9931-01	4.9921-01	4.9918-01	4.9922-01	4.9856-01
.700	4.9948-01	4.9913-01	4.9869-01	4.9842-01	4.9845-01	4.9848-01	4.9850-01	4.9853-01	4.9855-01	4.9717-01
.800	4.9894-01	4.9826-01	4.9743-01	4.9691-01	4.9696-01	4.9701-01	4.9706-01	4.9709-01	4.9713-01	4.9553-01
.900	4.9834-01	4.9733-01	4.9604-01	4.9525-01	4.9530-01	4.9535-01	4.9539-01	4.9544-01	4.9549-01	4.9383-01
1.000	4.9775-01	4.9631-01	4.9451-01	4.9339-01	4.9348-01	4.9357-01	4.9364-01	4.9371-01	4.9378-01	4.9383-01

INCIDENT NEUTRON ENERGY(MEV)

ANGLE	8.500	9.000
-1.000	4.9387-01	4.9391-01
-.900	4.9557-01	4.9562-01
-.800	4.9720-01	4.9723-01
-.700	4.9858-01	4.9858-01
-.600	4.9949-01	4.9974-01
-.500	5.0077-01	5.0075-01
-.400	5.0166-01	5.0161-01
-.300	5.0228-01	5.0221-01
-.200	5.0274-01	5.0271-01
-.100	5.0301-01	5.0296-01
.000	5.0311-01	5.0296-01
.100	5.0301-01	5.0271-01
.200	5.0274-01	5.0221-01
.300	5.0228-01	5.0161-01
.400	5.0166-01	5.0075-01
.500	5.0077-01	4.9974-01
.600	4.9949-01	4.9858-01
.700	4.9850-01	4.9723-01
.800	4.9720-01	4.9562-01
.900	4.9557-01	4.9391-01
1.000	4.9387-01	4.9391-01

A-102

ANGULAR DISTRIBUTION OF (3.8500 MEV) GAMMA RAY FROM DE-EXCITATION OF (3.8500 MEV LEVEL)

INCIDENT NEUTRON ENERGY(MEV)

ANGLE (COS)	4.017	4.500	5.000	5.500	6.000	6.500	7.000	7.500	8.000	8.500
-1.000	4.4307-01	4.4378-01	4.4225-01	4.4143-01	4.4214-01	4.4372-01	4.4501-01	4.4621-01	4.4733-01	4.4835-01
-.900	4.5956-01	4.6011-01	4.5794-01	4.5720-01	4.5823-01	4.6027-01	4.6169-01	4.6277-01	4.6352-01	4.6393-01
-.800	4.7169-01	4.7101-01	4.7431-01	4.7283-01	4.7300-01	4.7349-01	4.7395-01	4.7444-01	4.7496-01	4.7551-01
-.700	4.8636-01	4.8666-01	4.8665-01	4.8653-01	4.8679-01	4.8722-01	4.8749-01	4.8763-01	4.8776-01	4.8776-01
-.600	4.9821-01	4.9818-01	4.9691-01	4.9769-01	4.9774-01	4.9763-01	4.9763-01	4.9768-01	4.9779-01	4.9795-01
-.500	5.0732-01	5.0725-01	5.0734-01	5.0775-01	5.0779-01	5.0766-01	5.0752-01	5.0734-01	5.0712-01	5.0686-01
-.400	5.1496-01	5.1469-01	5.1542-01	5.1641-01	5.1314-01	5.0418-01	5.0571-01	5.0500-01	5.0604-01	5.0884-01
-.300	5.2078-01	5.2051-01	5.2124-01	5.2106-01	5.2100-01	5.2088-01	5.2064-01	5.2030-01	5.1985-01	5.1931-01
-.200	5.2501-01	5.2473-01	5.2552-01	5.2575-01	5.2580-01	5.2562-01	5.2529-01	5.2480-01	5.2414-01	5.2332-01
-.100	5.2766-01	5.2738-01	5.2816-01	5.2840-01	5.2844-01	5.2826-01	5.2798-01	5.2731-01	5.2655-01	5.2559-01
0.000	5.2871-01	5.2843-01	5.2923-01	5.2946-01	5.2950-01	5.2931-01	5.2894-01	5.2837-01	5.2761-01	5.2664-01
.100	5.2766-01	5.2738-01	5.2816-01	5.2840-01	5.2844-01	5.2826-01	5.2798-01	5.2731-01	5.2655-01	5.2332-01
.200	5.2501-01	5.2473-01	5.2552-01	5.2575-01	5.2580-01	5.2562-01	5.2529-01	5.2480-01	5.2414-01	5.2332-01
.300	5.2078-01	5.2051-01	5.2124-01	5.2106-01	5.2100-01	5.2088-01	5.2064-01	5.2030-01	5.1985-01	5.1931-01
.400	5.1496-01	5.1469-01	5.1542-01	5.1641-01	5.1314-01	5.0418-01	5.0571-01	5.0500-01	5.0604-01	5.0884-01
.500	5.0732-01	5.0725-01	5.0734-01	5.0775-01	5.0779-01	5.0766-01	5.0752-01	5.0734-01	5.0712-01	5.0686-01
.600	4.9821-01	4.9818-01	4.9691-01	4.9769-01	4.9774-01	4.9763-01	4.9763-01	4.9768-01	4.9779-01	4.9795-01
.700	4.8636-01	4.8666-01	4.8665-01	4.8653-01	4.8679-01	4.8722-01	4.8749-01	4.8768-01	4.8776-01	4.8776-01
.800	4.7344-01	4.7394-01	4.7318-01	4.7283-01	4.7300-01	4.7349-01	4.7395-01	4.7444-01	4.7496-01	4.7551-01
.900	4.5956-01	4.6011-01	4.5794-01	4.5720-01	4.5823-01	4.6027-01	4.6169-01	4.6277-01	4.6352-01	4.6393-01
1.000	4.4307-01	4.4378-01	4.4225-01	4.4143-01	4.4214-01	4.4372-01	4.4501-01	4.4621-01	4.4733-01	4.4835-01

ANGLE (COS)	9.000
-1.000	4.4929-01
-.900	4.6401-01
-.800	4.7609-01
-.700	4.8765-01
-.600	4.9816-01
-.500	5.0657-01
-.400	5.1340-01
-.300	5.1866-01
-.200	5.2233-01
-.100	5.2443-01
0.000	5.2549-01
.100	5.2443-01
.200	5.2233-01
.300	5.1866-01
.400	5.1340-01
.500	5.0657-01
.600	4.9816-01
.700	4.8765-01
.800	4.7609-01
.900	4.6401-01
1.000	4.4929-01

INCIDENT NEUTRON ENERGY(MEV)

ANGULAR DISTRIBUTION OF (1.7700 MEV) GAMMA RAY FROM DE-EXCITATION OF (3.8500 MEV LEVEL)

INCIDENT NEUTRON ENERGY(MEV)

ANGLE (COS)	4.017	4.500	5.000	5.500	6.000	6.500	7.000	7.500	8.000	8.500
-1.000	4.4307-01	4.4378-01	4.4225-01	4.4143-01	4.4214-01	4.4372-01	4.4501-01	4.4621-01	4.4733-0.	4.4835-01
-.900	4.5956-01	4.6011-01	4.5794-01	4.5720-01	4.5823-01	4.6027-01	4.6169-01	4.6277-01	4.6352-01	4.6393-01
-.800	4.7169-01	4.7101-01	4.7431-01	4.7283-01	4.7300-01	4.7349-01	4.7395-01	4.7444-01	4.7496-01	4.7551-01
-.700	4.8636-01	4.8666-01	4.8665-01	4.8653-01	4.8679-01	4.8722-01	4.8749-01	4.8768-01	4.8776-01	4.8776-01
-.600	4.9821-01	4.9818-01	4.9691-01	4.9769-01	4.9774-01	4.9763-01	4.9763-01	4.9768-01	4.9779-01	4.9795-01
-.500	5.0732-01	5.0725-01	5.0734-01	5.0775-01	5.0779-01	5.0766-01	5.0752-01	5.0734-01	5.0712-01	5.0686-01
-.400	5.1496-01	5.1469-01	5.1542-01	5.1641-01	5.1314-01	5.0818-01	5.0571-01	5.0500-01	5.0604-01	5.0884-01
-.300	5.2078-01	5.2051-01	5.2124-01	5.2106-01	5.2100-01	5.2088-01	5.2064-01	5.2030-01	5.1985-01	5.1931-01
-.200	5.2501-01	5.2473-01	5.2552-01	5.2575-01	5.2580-01	5.2562-01	5.2529-01	5.2480-01	5.2414-01	5.2332-01
-.100	5.2766-01	5.2738-01	5.2816-01	5.2840-01	5.2844-01	5.2826-01	5.2788-01	5.2731-01	5.2655-01	5.2559-01
.000	5.2871-01	5.2843-01	5.2923-01	5.2946-01	5.2950-01	5.2931-01	5.2788-01	5.2837-01	5.2761-01	5.2664-01
.100	5.2766-01	5.2738-01	5.2816-01	5.2840-01	5.2844-01	5.2826-01	5.2788-01	5.2731-01	5.2655-01	5.2559-01
.200	5.2501-01	5.2473-01	5.2552-01	5.2575-01	5.2580-01	5.2562-01	5.2064-01	5.2480-01	5.2414-01	5.2332-01
.300	5.2078-01	5.2051-01	5.2124-01	5.2106-01	5.2100-01	5.2088-01	5.2064-01	5.2030-01	5.1985-01	5.1931-01
.400	5.1496-01	5.1469-01	5.1542-01	5.1641-01	5.1314-01	5.0818-01	5.0571-01	5.0500-01	5.0604-01	5.0884-01
.500	5.0732-01	5.0725-01	5.0734-01	5.0775-01	5.0779-01	5.0766-01	5.0752-01	5.0734-01	5.0712-01	5.0686-01
.600	4.9821-01	4.9818-01	4.9691-01	4.9769-01	4.9774-01	4.9763-01	4.9763-01	4.9768-01	4.9779-01	4.9795-01
.700	4.8636-01	4.8666-01	4.8665-01	4.8653-01	4.8679-01	4.8722-01	4.8749-01	4.8768-01	4.8776-01	4.8776-01
.800	4.7344-01	4.7394-01	4.7318-01	4.7283-01	4.7300-01	4.7349-01	4.7395-01	4.7444-01	4.7496-01	4.7551-01
.900	4.5956-01	4.6011-01	4.5794-01	4.5720-01	4.5823-01	4.6027-01	4.6169-01	4.6277-01	4.6352-01	4.6393-01
1.000	4.4307-01	4.4378-01	4.4225-01	4.4143-01	4.4214-01	4.4372-01	4.4501-01	4.4621-01	4.4733-01	4.4835-01

INCIDENT NEUTRON ENERGY(MEV)

ANGLE (COS)	9.000
-1.000	4.4929-01
-.900	4.6401-01
-.800	4.7609-01
-.700	4.8765-01
-.600	4.9816-01
-.500	5.0657-01
-.400	5.1340-01
-.300	5.1866-01
-.200	5.2233-01
-.100	5.2549-01
.000	5.2443-01
.100	5.2233-01
.200	5.1866-01
.300	5.1340-01
.400	5.0657-01
.500	4.9816-01
.600	4.8765-01
.700	4.7609-01
.800	4.7609-01
.900	4.6401-01
1.000	4.4929-01

A-104

ANGULAR DISTRIBUTION OF (3.9150 MEV) GAMMA RAY FROM DE-EXCITATION OF (3.9150 MEV LEVEL)

INCIDENT NEUTRON ENERGY(MEV)

ANGLE (COS)	4.085	4.500	5.000	5.500	6.000	6.500	7.000	7.500	8.000	8.500
-1.000	4.4288-01	4.4435-01	4.4148-01	4.4095-01	4.4150-01	4.4279-01	4.4274-01	4.4362-01	4.4501-01	4.4690-01
-.900	4.5845-01	4.5918-01	4.5712-01	4.5723-01	4.5796-01	4.5915-01	4.5899-01	4.5958-01	4.6053-01	4.6183-01
-.800	4.7320-01	4.7402-01	4.7271-01	4.7339-01	4.7326-01	4.7297-01	4.7265-01	4.7289-01	4.7354-01	4.7461-01
-.700	4.8665-01	4.8673-01	4.8614-01	4.8663-01	4.8649-01	4.8623-01	4.8642-01	4.8668-01	4.8705-01	4.8755-01
-.600	4.9763-01	4.9793-01	4.9854-01	4.9720-01	4.9741-01	4.9810-01	4.9785-01	4.9786-01	4.9791-01	4.9801-01
-.500	5.0703-01	5.0690-01	5.0764-01	5.0735-01	5.0712-01	5.0686-01	5.0739-01	5.0742-01	5.0720-01	5.0675-01
-.400	5.1497-01	5.1483-01	5.1562-01	5.1576-01	5.1561-01	5.1522-01	5.1475-01	5.1436-01	5.1400-01	5.1368-01
-.300	5.2120-01	5.2062-01	5.2145-01	5.2158-01	5.2144-01	5.2108-01	5.2098-01	5.2069-01	5.2030-01	5.1979-01
-.200	5.2537-01	5.2491-01	5.2635-01	5.2589-01	5.2564-01	5.2531-01	5.2534-01	5.2497-01	5.2435-01	5.2347-01
-.100	5.2808-01	5.2750-01	5.2853-01	5.2847-01	5.2832-01	5.2795-01	5.2806-01	5.2764-01	5.2690-01	5.2583-01
.000	5.2914-01	5.2855-01	5.2939-01	5.2952-01	5.2937-01	5.2898-01	5.2870-01	5.2818-01	5.2747-01	5.2657-01
.100	5.2808-01	5.2750-01	5.2853-01	5.2847-01	5.2832-01	5.2795-01	5.2806-01	5.2764-01	5.2690-01	5.2583-01
.200	5.2537-01	5.2491-01	5.2635-01	5.2589-01	5.2564-01	5.2531-01	5.2534-01	5.2497-01	5.2435-01	5.2347-01
.300	5.2120-01	5.2062-01	5.2145-01	5.2158-01	5.2144-01	5.2108-01	5.2098-01	5.2069-01	5.2030-01	5.1979-01
.400	5.1497-01	5.1483-01	5.1562-01	5.1576-01	5.1561-01	5.1522-01	5.1475-01	5.1436-01	5.1400-01	5.1368-01
.500	5.0703-01	5.0690-01	5.0764-01	5.0735-01	5.0712-01	5.0686-01	5.0739-01	5.0742-01	5.0720-01	5.0675-01
.600	4.9763-01	4.9793-01	4.9854-01	4.9720-01	4.9711-01	4.9810-01	4.9785-01	4.9786-01	4.9791-01	4.9801-01
.700	4.8665-01	4.8673-01	4.8614-01	4.8663-01	4.8649-01	4.8623-01	4.8642-01	4.8668-01	4.8705-01	4.8755-01
.800	4.7320-01	4.7402-01	4.7271-01	4.7339-01	4.7326-01	4.7297-01	4.7265-01	4.7289-01	4.7354-01	4.7461-01
.900	4.5845-01	4.5918-01	4.5712-01	4.5723-01	4.5796-01	4.5915-01	4.5899-01	4.5958-01	4.6053-01	4.6183-01
1.000	4.4288-01	4.4435-01	4.4148-01	4.4095-01	4.4150-01	4.4279-01	4.4274-01	4.4362-01	4.4501-01	4.4690-01

ANGLE	9.000
-1.000	4.4929-01
-.900	4.6348-01
-.800	4.7609-01
-.700	4.8818-01
-.600	4.9816-01
-.500	5.0604-01
-.400	5.1340-01
-.300	5.1918-01
-.200	5.2233-01
-.100	5.2443-01
.000	5.2549-01
.100	5.2443-01
.200	5.2233-01
.300	5.1918-01
.400	5.1340-01
.500	5.0604-01
.600	4.9816-01
.700	4.8818-01
.800	4.7609-01
.900	4.6348-01
1.000	4.4929-01

INCIDENT NEUTRON ENERGY(MEV)

A-105

ANGULAR DISTRIBUTION OF (3.4760 MEV) GAMMA RAY FROM DE-EXCITATION OF (3.9150 MEV LEVEL)

INCIDENT NEUTRON ENERGY(MEV)

ANGLE (COS)	4.500	5.000	5.500	6.000	6.500	7.000	7.500	8.000	8.500
-1.000	4.4435-01	4.4148-01	4.4095-01	4.4150-01	4.4279-01	4.4274-01	4.4362-01	4.4501-01	4.4690-01
-.900	4.5910-01	4.5717-01	4.5723-01	4.5796-01	4.5915-01	4.5899-01	4.5956-01	4.6053-01	4.6183-01
-.800	4.7402-01	4.7271-01	4.7339-01	4.7326-01	4.7297-01	4.7265-01	4.7289-01	4.7354-01	4.7461-01
-.700	4.8672-01	4.8614-01	4.8663-01	4.8649-01	4.8623-01	4.8642-01	4.8666-01	4.8708-01	4.8755-01
-.600	4.9793-01	4.9804-01	4.9740-01	4.9741-01	4.9810-01	4.9704-01	4.9766-01	4.9791-01	4.9801-01
-.500	5.0690-01	5.0764-01	5.0738-01	5.0712-01	5.0666-01	5.0739-01	5.0742-01	5.0720-01	5.0675-01
-.400	5.1403-01	5.1562-01	5.1576-01	5.1561-01	5.1522-01	5.1478-01	5.1436-01	5.1400-01	5.1366-01
-.300	5.2062-01	5.2145-01	5.2160-01	5.2144-01	5.2108-01	5.2094-01	5.2097-01	5.2030-01	5.1979-01
-.200	5.2491-01	5.2635-01	5.2660-01	5.2664-01	5.2651-01	5.2634-01	5.2497-01	5.2435-01	5.2347-01
-.100	5.2750-01	5.2633-01	5.2847-01	5.2635-01	5.2795-01	5.2804-01	5.2764-01	5.2690-01	5.2603-01
.000	5.2055-01	5.2939-01	5.2952-01	5.2937-01	5.2898-01	5.2870-01	5.2810-01	5.2747-01	5.2657-01
.100	5.2800-01	5.2633-01	5.2847-01	5.2635-01	5.2798-01	5.2804-01	5.2764-01	5.2690-01	5.2587-01
.200	5.2537-01	5.2634-01	5.2660-01	5.2664-01	5.2651-01	5.2634-01	5.2497-01	5.2435-01	5.2347-01
.300	5.2120-01	5.2145-01	5.2160-01	5.2144-01	5.2100-01	5.2094-01	5.2097-01	5.2030-01	5.1979-01
.400	5.1497-01	5.1562-01	5.1576-01	5.1561-01	5.1522-01	5.1478-01	5.1436-01	5.1400-01	5.1366-01
.500	5.0690-01	5.0764-01	5.0738-01	5.0712-01	5.0686-01	5.0739-01	5.0742-01	5.0720-01	5.0675-01
.600	4.9763-01	4.9804-01	4.9720-01	4.9741-01	4.9810-01	4.9710-01	4.9766-01	4.9791-01	4.9801-01
.700	4.8673-01	4.8614-01	4.8663-01	4.8649-01	4.8683-01	4.8683-01	4.8666-01	4.8705-01	4.8755-01
.800	4.7402-01	4.7271-01	4.7339-01	4.7326-01	4.7297-01	4.7297-01	4.7284-01	4.7354-01	4.7461-01
.900	4.5910-01	4.5712-01	4.5723-01	4.5796-01	4.5915-01	4.5899-01	4.5954-01	4.6053-01	4.6183-01
1.000	4.4435-01	4.4148-01	4.4095-01	4.4180-01	4.4279-01	4.4274-01	4.4362-01	4.4501-01	4.4690-01

ANGLE (COS)	4.000
-1.000	4.4288-01
-.900	4.5845-01
-.800	4.7320-01
-.700	4.8665-01
-.600	4.9763-01
-.500	5.0703-01
-.400	5.1497-01
-.300	5.2120-01
-.200	5.2537-01
-.100	5.2800-01
.000	5.2914-01
.100	5.2800-01
.200	5.2537-01
.300	5.2120-01
.400	5.1497-01
.500	5.0703-01
.600	4.9763-01
.700	4.7320-01
.800	4.7320-01
.900	4.5845-01
1.000	4.4288-01

ANGLE	9.000
-1.000	4.4929-01
-.900	4.6348-01
-.800	4.7609-01
-.700	4.8018-01
-.600	5.0604-01
-.500	5.1340-01
-.400	5.1910-01
-.300	5.2233-01
-.200	5.2549-01
-.100	5.2443-01
.000	5.2233-01
.100	5.1910-01
.200	5.1340-01
.300	5.0604-01
.400	4.9016-01
.500	4.8018-01
.600	4.7609-01
.700	4.6348-01
.800	4.4929-01
.900	4.6348-01
1.000	4.4929-01

INCIDENT NEUTRON ENERGY(MEV)

ANGULAR DISTRIBUTION OF (4.7700 MEV) GAMMA RAY FROM DE-EXCITATION OF (4.7700 MEV LEVEL)

INCIDENT NEUTRON ENERGY(MEV)

ANGLE (COS)	4.906	5.500	6.000	6.500	7.000	7.500	8.000	8.500	9.000
-1.000	4.3970-01	4.3840-01	4.3795-01	4.3047-01	4.3935-01	4.3796-01	4.5104-01	4.7687-01	5.1302-01
-.900	4.5727-01	4.5642-01	4.5591-01	4.5869-01	4.5601-01	4.5691-01	4.5774-01	4.5877-01	4.5906-01
-.800	4.7058-01	4.7129-01	4.7168-01	4.7161-01	4.7168-01	4.7240-01	4.7280-01	4.7320-01	4.7356-01
-.700	4.8655-01	4.8515-01	4.8466-01	4.8531-01	4.8580-01	4.8675-01	4.8668-01	4.8652-01	4.8566-01
-.600	4.9400-01	4.9670-01	4.9806-01	4.9769-01	4.9700-01	4.9800-01	4.9765-01	4.9740-01	4.9671-01
-.500	5.0350-01	5.0711-01	5.0675-01	5.0789-01	5.0775-01	5.0760-01	5.0727-01	5.0680-01	5.0618-01
-.400	5.1743-01	5.1645-01	5.1589-01	5.1887-01	5.1569-01	5.1889-01	5.1508-01	5.1420-01	5.1302-01
-.300	5.2320-01	5.2320-01	5.2233-01	5.2229-01	5.2196-01	5.2149-01	5.2079-01	5.1990-01	5.1881-01
-.200	5.2807-01	5.2749-01	5.2712-01	5.2712-01	5.2665-01	5.2570-01	5.2494-01	5.2402-01	5.2302-01
-.100	5.3127-01	5.3023-01	5.2977-01	5.3023-01	5.2987-01	5.2901-01	5.2797-01	5.2668-01	5.2512-01
-.000	5.3233-01	5.3129-01	5.3063-01	5.3129-01	5.3095-01	5.3007-01	5.2905-01	5.2773-01	5.2610-01
.100	5.3127-01	5.3023-01	5.2977-01	5.3023-01	5.2907-01	5.2901-01	5.2797-01	5.2668-01	5.2512-01
.200	5.2807-01	5.2749-01	5.2712-01	5.2712-01	5.2665-01	5.2570-01	5.2494-01	5.2402-01	5.2302-01
.300	5.2320-01	5.2270-01	5.2233-01	5.2229-01	5.2196-01	5.2149-01	5.2079-01	5.1990-01	5.1881-01
.400	5.1743-01	5.1645-01	5.1589-01	5.1867-01	5.1869-01	5.1859-01	5.1505-01	5.1420-01	5.1302-01
.500	5.0358-01	5.0711-01	5.0675-01	5.0709-01	5.0773-01	5.0760-01	5.0727-01	5.0680-01	5.0618-01
.600	4.9400-01	4.9670-01	4.9806-01	4.9769-01	4.9780-01	4.9800-01	4.9765-01	4.9740-01	4.9671-01
.700	4.8655-01	4.8515-01	4.8466-01	4.8531-01	4.8686-01	4.8675-01	4.8668-01	4.8652-01	4.8566-01
.800	4.7088-01	4.7129-01	4.7168-01	4.7161-01	4.7160-01	4.7240-01	4.7282-01	4.7320-01	4.7356-01
.900	4.5727-01	4.5642-01	4.5591-01	4.5569-01	4.5601-01	4.5691-01	4.5772-01	4.5877-01	4.5906-01
1.000	4.3970-01	4.3840-01	4.3795-01	4.3047-01	4.3935-01	4.4086-01	4.4207-01	4.4314-01	4.4410-01

ANGULAR DISTRIBUTION OF (4.3890 MEV) GAMMA RAY FROM DE-EXCITATION OF (4.7780 MEV LEVEL)

INCIDENT NEUTRON ENERGY(MEV)

ANGLE (COS)	4.966	5.500	6.000	6.500	7.000	7.800	8.000	8.500	9.000
-1.000	4.3970-01	4.3840-01	4.3795-01	4.3047-01	4.3934-01	4.3796-01	4.5184-01	4.7607-01	5.1302-01
-.900	4.5727-01	4.5642-01	4.5591-01	4.5569-01	4.5301-01	4.5491-01	4.5778-01	4.5877-01	4.5984-01
-.800	4.7058-01	4.7129-01	4.7168-01	4.7161-01	4.7100-01	4.7240-01	4.7262-01	4.7320-01	4.7356-01
-.700	4.865B-01	4.8515-01	4.8468-01	4.8531-01	4.8506-01	4.8475-01	4.8668-01	4.8652-01	4.8566-01
-.600	4.9400-01	4.9670-01	4.9806-01	4.9769-01	4.9700-01	4.9800-01	4.9785-01	4.9740-01	4.9671-01
-.500	5.0358-01	5.0711-01	5.0875-01	5.0709-01	5.0773-01	5.0760-01	5.0727-01	5.0680-01	5.0618-01
-.400	5.1743-01	5.1645-01	5.1589-01	5.1507-01	5.1589-01	5.1589-01	5.1505-01	5.1420-01	5.1302-01
-.300	5.2328-01	5.2270-01	5.2233-01	5.2229-01	5.2196-01	5.2149-01	5.2079-01	5.1970-01	5.1881-01
-.200	5.2007-01	5.2749-01	5.2712-01	5.2712-01	5.2663-01	5.2578-01	5.2494-01	5.2402-01	5.2302-01
-.100	5.3127-01	5.3023-01	5.2977-01	5.3023-01	5.3093-01	5.3007-01	5.2905-01	5.2666-01	5.2512-01
-.000	5.3233-01	5.3023-01	5.2977-01	5.3129-01	5.2987-01	5.3007-01	5.2905-01	5.2773-01	5.2618-01
.100	5.3127-01	5.2749-01	5.2712-01	5.2712-01	5.2663-01	5.2001-01	5.2797-01	5.2666-01	5.2512-01
.200	5.2007-01	5.2270-01	5.2233-01	5.2229-01	5.2196-01	5.2570-01	5.2494-01	5.2402-01	5.2302-01
.300	5.2328-01	5.1645-01	5.1589-01	5.1507-01	5.2196-01	5.2149-01	5.2079-01	5.1990-01	5.1881-01
.400	5.1743-01	5.0711-01	5.0875-01	5.0709-01	5.1589-01	5.1589-01	5.1505-01	5.1420-01	5.1302-01
.500	5.0358-01	4.9670-01	5.0875-01	5.0709-01	5.0773-01	5.0760-01	5.0727-01	5.0680-01	5.0618-01
.600	4.9400-01	4.9670-01	4.9806-01	4.9769-01	4.9700-01	4.9000-01	4.9783-01	4.9740-01	4.9671-01
.700	4.8655-01	4.8515-01	4.8466-01	4.8531-01	4.8566-01	4.8475-01	4.8668-01	4.8652-01	4.8566-01
.800	4.7058-01	4.7129-01	4.7168-01	4.7161-01	4.7189-01	4.7240-01	4.7282-01	4.7320-01	4.7356-01
.900	4.5727-01	4.5642-01	4.5591-01	4.5569-01	4.5601-01	4.5611-01	4.5778-01	4.5877-01	4.5984-01
1.000	4.3970-01	4.3840-01	4.3795-01	4.3047-01	4.3934-01	4.4035-01	4.4207-01	4.4514-01	4.4410-01

A-108

ANGULAR DISTRIBUTION OF (2.6900 MEV) GAMMA RAY FROM DE-EXCITATION OF (4.7700 MEV LEVEL)

INCIDENT NEUTRON ENERGY(MEV)

ANGLE (COS)	4.986	5.500	6.000	6.500	7.000	7.500	8.000	8.500	9.000
-1.000	4.3970-01	4.3840-01	4.3795-01	4.3047-01	4.3935-01	4.3796-01	4.5184-01	4.7607-01	5.1302-01
-.900	4.5727-01	4.5642-01	4.5591-01	4.5569-01	4.5601-01	4.5691-01	4.5778-01	4.5077-01	4.5908-01
-.800	4.7058-01	4.7129-01	4.7168-01	4.7161-01	4.7109-01	4.7240-01	4.7285-01	4.7320-01	4.7356-01
-.700	4.8655-01	4.8515-01	4.8466-01	4.8531-01	4.8506-01	4.8675-01	4.8660-01	4.8652-01	4.8566-01
-.600	4.9400-01	4.9670-01	4.9806-01	4.9769-01	4.9700-01	4.9800-01	4.9763-01	4.9740-01	4.9671-01
-.500	5.0358-01	5.0711-01	5.0875-01	5.0789-01	5.0773-01	5.0760-01	5.0727-01	5.0680-01	5.0618-01
-.400	5.1743-01	5.1645-01	5.1589-01	5.1587-01	5.1569-01	5.1889-01	5.1505-01	5.1420-01	5.1302-01
-.300	5.2326-01	5.2270-01	5.2233-01	5.2229-01	5.2196-01	5.2149-01	5.2079-01	5.1990-01	5.1881-01
-.200	5.2807-01	5.2749-01	5.2712-01	5.2712-01	5.2663-01	5.2578-01	5.2494-01	5.2402-01	5.2302-01
-.100	5.3127-01	5.3023-01	5.2977-01	5.3023-01	5.2907-01	5.2901-01	5.2797-01	5.2666-01	5.2512-01
.000	5.3233-01	5.3129-01	5.3083-01	5.3129-01	5.3093-01	5.3007-01	5.2903-01	5.2773-01	5.2618-01
.100	5.3127-01	5.3023-01	5.2977-01	5.3023-01	5.2987-01	5.2901-01	5.2797-01	5.2666-01	5.2512-01
.200	5.2807-01	5.2749-01	5.2712-01	5.2712-01	5.2663-01	5.2570-01	5.2494-01	5.2402-01	5.2302-01
.300	5.2328-01	5.2270-01	5.2233-01	5.2229-01	5.2196-01	5.2149-01	5.2079-01	5.1990-01	5.1881-01
.400	5.1743-01	5.1645-01	5.1589-01	5.1587-01	5.1569-01	5.1959-01	5.1505-01	5.1420-01	5.1302-01
.500	5.0358-01	5.0711-01	5.0875-01	5.0709-01	5.0773-01	5.0760-01	5.0727-01	5.0680-01	5.0618-01
.600	4.9400-01	4.9670-01	4.9806-01	4.9769-01	4.9780-01	4.9800-01	4.9763-01	4.9740-01	4.9671-01
.700	4.8655-01	4.8515-01	4.8466-01	4.8531-01	4.8584-01	4.8475-01	4.8660-01	4.8652-01	4.8566-01
.800	4.7058-01	4.7129-01	4.7168-01	4.7161-01	4.7189-01	4.7240-01	4.7285-01	4.7320-01	4.7356-01
.900	4.5727-01	4.5642-01	4.5591-01	4.5569-01	4.5601-01	4.5691-01	4.5778-01	4.5877-01	4.5908-01
1.000	4.3970-01	4.3840-01	4.3795-01	4.3847-01	4.3935-01	4.4088-01	4.4207-01	4.4314-01	4.4410-01

ANGULAR DISTRIBUTION OF (1.7950 MEV) GAMMA RAY FROM DE-EXCITATION OF (4.7780 MEV LEVEL)

INCIDENT NEUTRON ENERGY(MEV)

ANGLE (COS)	4.986	5.500	6.000	6.500	7.000	7.500	8.000	8.500	9.000
-1.000	4.3970-01	4.3840-01	4.3795-01	4.3847-01	4.3934-01	4.3796-01	4.5184-01	4.7687-01	5.1302-01
-.900	4.5727-01	4.5642-01	4.5591-01	4.5569-01	4.5601-01	4.5591-01	4.5770-01	4.5877-01	4.5980-01
-.800	4.7058-01	4.7129-01	4.7168-01	4.7161-01	4.7189-01	4.7240-01	4.7262-01	4.7320-01	4.7356-01
-.700	4.8655-01	4.8515-01	4.8466-01	4.8531-01	4.8506-01	4.8475-01	4.8608-01	4.8652-01	4.8566-01
-.600	4.9400-01	4.9670-01	4.9806-01	4.9769-01	4.9780-01	4.9800-01	4.9703-01	4.9740-01	4.9671-01
-.500	5.0358-01	5.0711-01	5.0875-01	5.0789-01	5.0773-01	5.0760-01	5.0727-01	5.0680-01	5.0614-01
-.400	5.1743-01	5.1645-01	5.1589-01	5.1507-01	5.1569-01	5.1559-01	5.1505-01	5.1420-01	5.1302-01
-.300	5.2328-01	5.2270-01	5.2233-01	5.2229-01	5.2196-01	5.2149-01	5.2079-01	5.1990-01	5.1881-01
-.200	5.2807-01	5.2749-01	5.2712-01	5.2712-01	5.2663-01	5.2578-01	5.2494-01	5.2402-01	5.2302-01
-.100	5.3127-01	5.3023-01	5.2977-01	5.3023-01	5.2987-01	5.2901-01	5.2797-01	5.2668-01	5.2512-01
.000	5.3233-01	5.3129-01	5.3083-01	5.3129-01	5.3093-01	5.3007-01	5.2903-01	5.2773-01	5.2618-01
.100	5.3127-01	5.3023-01	5.2977-01	5.3023-01	5.2987-01	5.2901-01	5.2797-01	5.2668-01	5.2512-01
.200	5.2807-01	5.2749-01	5.2712-01	5.2712-01	5.2663-01	5.2578-01	5.2494-01	5.2402-01	5.2302-01
.300	5.2328-01	5.2270-01	5.2233-01	5.2229-01	5.2196-01	5.2149-01	5.2079-01	5.1990-01	5.1881-01
.400	5.1743-01	5.1645-01	5.1589-01	5.1587-01	5.1569-01	5.1559-01	5.1505-01	5.1420-01	5.1302-01
.500	5.0358-01	5.0711-01	5.0875-01	5.0789-01	5.0773-01	5.0760-01	5.0727-01	5.0680-01	5.0614-01
.600	4.9400-01	4.9670-01	4.9806-01	4.9769-01	4.9700-01	4.9800-01	4.9703-01	4.9740-01	4.9671-01
.700	4.8655-01	4.8515-01	4.8466-01	4.8531-01	4.8506-01	4.8475-01	4.8608-01	4.8652-01	4.8566-01
.800	4.7058-01	4.7129-01	4.7168-01	4.7161-01	4.7189-01	4.7240-01	4.7262-01	4.7320-01	4.7356-01
.900	4.5727-01	4.5642-01	4.5591-01	4.5569-01	4.5601-01	4.5591-01	4.5770-01	4.5877-01	4.5980-01
1.000	4.3970-01	4.3840-01	4.3795-01	4.3847-01	4.3934-01	4.4080-01	4.4207-01	4.4314-01	4.4410-01

ANGULAR DISTRIBUTION OF (1.1000 MEV) GAMMA RAY FROM DE-EXCITATION OF (4.7780 MEV LEVEL)

INCIDENT NEUTRON ENERGY(MEV)

ANGLE (COS)	4.986	5.500	6.000	6.500	7.000	7.500	8.000	8.500	9.000
-1.000	4.3970-01	4.3840-01	4.3795-01	4.3847-01	4.3935-01	4.3796-01	4.5104-01	4.7687-01	5.1302-01
-.900	4.5727-01	4.5642-01	4.5591-01	4.5559-01	4.5601-01	4.5691-01	4.5778-01	4.5077-01	4.5988-01
-.800	4.7058-01	4.7129-01	4.7168-01	4.7161-01	4.7189-01	4.7240-01	4.7285-01	4.7320-01	4.7356-02
-.700	4.8655-01	4.8515-01	4.8466-01	4.8531-01	4.8886-01	4.8675-01	4.8608-01	4.8652-01	4.8566-01
-.600	4.9400-01	4.9670-01	4.9806-01	4.9769-01	4.9780-01	4.9000-01	4.9703-01	4.9740-01	4.9671-01
-.500	5.0358-01	5.0711-01	5.0875-01	5.0785-01	5.0773-01	5.0760-01	5.0705-01	5.0680-01	5.0618-01
-.400	5.1743-01	5.1645-01	5.1569-01	5.1507-01	5.1569-01	5.1559-01	5.1505-01	5.1420-01	5.1302-01
-.300	5.2328-01	5.2270-01	5.2233-01	5.2229-01	5.2174-01	5.2149-01	5.2079-01	5.1990-01	5.1881-01
-.200	5.2807-01	5.2749-01	5.2712-01	5.2712-01	5.2663-01	5.2578-01	5.2494-01	5.2402-01	5.2302-01
-.100	5.3127-01	5.3023-01	5.2977-01	5.3023-01	5.2907-01	5.2901-01	5.2797-01	5.2668-01	5.2512-01
-.100	5.3233-01	5.3129-01	5.3083-01	5.3129-01	5.3093-01	5.3007-01	5.2903-01	5.2773-01	5.2618-01
.100	5.3127-01	5.3023-01	5.2977-01	5.3023-01	5.2987-01	5.2901-01	5.2797-01	5.2668-01	5.2512-01
.200	5.2807-01	5.2749-01	5.2712-01	5.2712-01	5.2653-01	5.2578-01	5.2494-01	5.2402-01	5.2302-01
.300	5.2328-01	5.2270-01	5.2233-01	5.2229-01	5.2174-01	5.2149-01	5.2079-01	5.1990-01	5.1801-01
.400	5.1743-01	5.1645-01	5.1569-01	5.1587-01	5.1569-01	5.1559-01	5.1505-01	5.1420-01	5.1302-01
.500	5.0358-01	5.0711-01	5.0875-01	5.0789-01	5.0773-01	5.0760-01	5.0727-01	5.0680-01	5.0618-01
.600	4.9400-01	4.9670-01	4.9806-01	4.9769-01	4.9700-01	4.9400-01	4.9783-01	4.9740-01	4.9671-01
.700	4.8655-01	4.8515-01	4.8466-01	4.8531-01	4.8506-01	4.6475-01	4.8608-01	4.8652-01	4.8566-01
.800	4.7058-01	4.7129-01	4.7168-01	4.7161-01	4.7189-01	4.7240-01	4.7285-01	4.7320-01	4.7356-01
.900	4.5727-01	4.5642-01	4.5591-01	4.5569-01	4.5601-01	4.5691-01	4.5778-01	4.5877-01	4.5988-01
1.000	4.3970-01	4.3840-01	4.3795-01	4.3847-01	4.3935-01	4.4086-01	4.4207-01	4.4314-01	4.4410-01

ANGULAR DISTRIBUTION OF (7.2100 MEV) GAMMA RAY FROM DE-EXCITATION OF (7.2100 MEV LEVEL)

INCIDENT NEUTRON ENERGY(MEV)

ANGLE (COS)	7.422	8.000	8.500	9.000
-1.000	4.2177-01	4.2643-01	4.3169-01	4.3768-01
-.900	4.4541-01	4.4869-01	4.523n-01	4.5659-01
-.800	4.6414-01	4.6699-01	4.7021-01	4.7388-01
-.700	4.7787-01	4.8113-01	4.8482-01	4.8901-01
-.600	4.9940-01	5.0032-01	5.0135-01	5.0252-01
-.500	5.0928-01	5.1046-01	5.1180-01	5.1333-01
-.400	5.1880-01	5.1214-01	5.0461-01	4.9604-01
-.300	5.2677-01	5.1983-01	5.1199-01	5.0306-01
-.200	5.3657-01	5.3609-01	5.3555-01	5.3494-01
-.100	5.4050-01	5.4030-01	5.4006-01	5.3981-01
.000	5.4104-01	5.4084-01	5.4061-01	5.4035-01
.100	5.4050-01	5.4030-01	5.4006-01	5.3981-01
.200	5.3657-01	5.3609-01	5.3555-01	5.3494-01
.300	5.2677-01	5.1983-01	5.1199-01	5.0306-01
.400	5.1880-01	5.1214-01	5.0461-01	4.9604-01
.500	5.0928-01	5.1046-01	5.1180-01	5.1333-01
.600	4.9940-01	5.0032-01	5.0135-01	5.0252-01
.700	4.7787-01	4.8113-01	4.8482-01	4.8901-01
.800	4.6414-01	4.6699-01	4.7021-01	4.7388-01
.900	4.4541-01	4.4869-01	4.523A-01	4.5659-01
1.000	4.2177-01	4.2643-01	4.3169-01	4.3768-01

ANGULAR DISTRIBUTION OF (6.6600 MEV) GAMMA RAY FROM DE-EXCITATION OF (7.2100 MEV LEVEL)

INCIDENT NEUTRON ENERGY(MEV)

ANGLE (COS)	7.422	8.000	8.500	9.000
-1.000	4.2177-01	4.2643-01	4.3169-01	4.3768-01
-.900	4.4541-01	4.4869-01	4.5238-01	4.5659-01
-.800	4.6414-01	4.6699-01	4.7021-01	4.7388-01
-.700	4.7787-01	4.8113-01	4.8482-01	4.8901-01
-.600	4.9940-01	5.0032-01	5.0135-01	5.0252-01
-.500	5.0928-01	5.1046-01	5.1180-01	5.1333-01
-.400	5.1880-01	5.1214-01	5.0461-01	4.9604-01
-.300	5.2677-01	5.1983-01	5.1199-01	5.0306-01
-.200	5.3657-01	5.3609-01	5.3555-01	5.3494-01
-.100	5.4050-01	5.4030-01	5.4006-01	5.3981-01
.000	5.4104-01	5.4084-01	5.4061-01	5.4035-01
.100	5.4050-01	5.4030-01	5.4006-01	5.3981-01
.200	5.3657-01	5.3609-01	5.3555-01	5.3494-01
.300	5.2677-01	5.1983-01	5.1199-01	5.0306-01
.400	5.1880-01	5.1214-01	5.0461-01	4.9604-01
.500	5.0928-01	5.1046-01	5.1180-01	5.1333-01
.600	4.9940-01	5.0032-01	5.0135-01	5.0252-01
.700	4.7787-01	4.8113-01	4.8482-01	4.8901-01
.800	4.6414-01	4.6699-01	4.7021-01	4.7388-01
.900	4.4541-01	4.4663-01	4.5238-01	4.5659-01
1.000	4.2177-01	4.2643-01	4.3169-01	4.3768-01

ANGULAR DISTRIBUTION OF (4.4200 MEV) GAMMA RAY FROM DE-EXCITATION OF (7.2100 MEV LEVEL)

INCIDENT NEUTRON ENERGY(MEV)

ANGLE (COS)	7.422	8.000	8.500	9.000
-1.000	4.2177-01	4.2643-01	4.3169-01	4.3768-01
-.900	4.4541-01	4.4869-01	4.5236-01	4.5659-01
-.800	4.6414-01	4.6699-01	4.7021-01	4.7388-01
-.700	4.7787-01	4.8113-01	4.8482-01	4.8901-01
-.600	4.9940-01	5.0032-01	5.0135-01	5.0252-01
-.500	5.0928-01	5.1046-01	5.1180-01	5.1333-01
-.400	5.1880-01	5.1214-01	5.0461-01	4.9604-01
-.300	5.2677-01	5.1983-01	5.1199-01	5.0306-01
-.200	5.3657-01	5.3609-01	5.3555-01	5.3494-01
-.100	5.4050-01	5.4030-01	5.4006-01	5.3981-01
.000	5.4104-01	5.4084-01	5.4061-01	5.4035-01
.100	5.4050-01	5.4030-01	5.40v	5.3981-01
.200	5.3657-01	5.3609-01	5.355~	5.3494-01
.300	5.2677-01	5.1983-01	5.1199-01	5.0306-01
.400	5.1880-01	5.1214-01	5.0461-01	4.9604-01
.500	5.0928-01	5.1046-01	5.1180-01	5.1333-01
.600	4.9940-01	5.0032-01	5.0135-01	5.0252-01
.700	4.7787-01	4.8113-01	4.8432-01	4.8901-01
.800	4.6414-01	4.6699-01	4.7021-01	4.7388-01
.900	4.4541-01	4.4869-01	4.5238-01	4.5659-01
1.000	4.2177-01	4.2643-01	4.3169-01	4.3768-01

ANGULAR DISTRIBUTION OF (4.1600 MEV) GAMMA RAY FROM DE-EXCITATION OF (7.2100 MEV LEVEL)
INCIDENT NEUTRON ENERGY(MEV)

ANGLE (COS)	7.422	8.000	8.500	9.000
-1.000	4.2177-01	4.2643-01	4.3169-01	4.3768-01
-.900	4.4541-01	4.4869-01	4.5238-01	4.5659-01
-.800	4.6414-01	4.6699-01	4.7021-01	4.7388-01
-.700	4.7787-01	4.8113-01	4.8482-01	4.8901-01
-.600	4.9940-01	5.0032-01	5.0135-01	5.0252-01
-.500	5.0928-01	5.1046-01	5.1180-01	5.1333-01
-.400	5.1880-01	5.1214-01	5.0461-01	4.9604-01
-.300	5.2677-01	5.1983-01	5.1199-01	5.0306-01
-.200	5.3657-01	5.3609-01	5.3555-01	5.3494-01
-.100	5.4050-01	5.4030-01	5.4006-01	5.3981-01
.000	5.4104-01	5.4084-01	5.4061-01	5.4035-01
.100	5.4050-01	5.4030-01	5.4006-01	5.3981-01
.200	5.3657-01	5.3609-01	5.3555-01	5.3494-01
.300	5.2677-01	5.1983-01	5.1199-01	5.0306-01
.400	5.1880-01	5.1214-01	5.0461-01	4.9604-01
.500	5.0928-01	5.1046-01	5.1180-01	5.1333-01
.600	4.9940-01	5.0032-01	5.0135-01	5.0252-01
.700	4.7787-01	4.8113-01	4.8482-01	4.8901-01
.800	4.6414-01	4.6699-01	4.7021-01	4.7388-01
.900	4.4541-01	4.4869-01	4.5238-01	4.5659-01
1.000	4.2177-01	4.2643-01	4.3169-01	4.3768-01

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13. ABSTRACT

Neutron and gamma ray production cross sections sets have been prepared for the element sodium. These data sets include total and partial neutron cross sections as well as the cross sections for producing deexcitation gamma rays. Information is also given for the angular and energy distribution of the secondary neutron and gamma rays.

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14 KEY WORDS	LINK A		LINK B		LINK C	
	ROLE	WT	ROLE	WT	ROLE	WT
Neutron cross sections						
Cross sections, neutron of sodium						

Energy distribution
    of neutrons
    of gamma rays						

Angular distribution
    of neutrons
    of gamma rays						